Appendix A. Grizzly and Black Bear Management Project Statement From Denali National Park and Preserve's Resource Management Plan August, 1998

GRIZZLY AND BLACK BEARS

PROJECT CODE: DENA-N-364.2

SERVICEWIDE ISSUES:

N18	Visitor Use Impacts on Backcountry Park Resources
N24	Human Impacts Within and Adjacent to Park
N16	Biological Impacts of Near-Park Development on Populations of Animals
N20	Lack of Basic Data - Insufficient Understanding of Park Ecosystems and Threats to Them

STATEMENT OF PROBLEM

Present Condition

Denali National Park and Preserve currently receives over 600,000 person days of visitor use per year in an area with grizzly bear (*Ursus arctos*) densities as high as 32 bears/1000km^2 (Dean 1987, Keay unpublished data). As visitation to Denali continues to increase, so will the potential for impacts to bear populations. Grizzly bears and black bears (*U. americanus*) are unpredictable animals that can seriously threaten human safety (Herrero 1985). In Denali National Park, many people have the opportunity to observe grizzly bears in their natural environment. In 1989, 95% of park visitors using the visitor transportation system were able to observe grizzly bears along the park road (Machlis 1990). The park provides a valuable opportunity for the public to foster an appreciation and understanding of bears. This appreciation and public support could enhance efforts to conserve threatened bear populations in other areas.

Despite the legal protection of grizzly and black bears within the wilderness portion of the park, the bear population continues to face impacts from human activities inside park boundaries and throughout surrounding areas. Within and adjacent to the park, bears must adapt their behavior to a variety of widely dispersed human influences. These influences include garbage dumps, garbage incinerators, food caches, human developments, frontcountry hiking and camping, backcountry hiking and camping, existing and proposed road use, development, and legal and illegal harvest. These influences have potential to

impact movements of bears, bear behavior, and population sex and age structure resulting in an unnatural bear population.

Visitor use in Denali continues to rise. Consequently, the potential for conflict between bears and people is a major concern. Bear-human conflicts result in loss of wild and free ranging bears and could threaten human safety. Bear behavior and ecology is strongly influenced by the motivation to obtain high energy sources of food. The availability of human foods increases as visitor numbers increase. Availability of human food and garbage at campsites, campgrounds, and other areas of human use may attract both black and grizzly bears. Habituation of bears to people by food rewards is the primary factor associated with bear-human conflicts in national parks (Herrero 1985, Herrero and Fleck 1989). Food-conditioned bears may behave aggressively toward people in order to obtain food. Although no human fatalities have occurred in the park and injuries are few, the number of bear-human incidents and encounters is high. In 1996, over 240 bear-human interactions were reported. Incidents involving property damage are an annual occurrence. Factors affecting bear-human conflicts must be investigated. The continued experimental development and implementation of a bear-human conflict management program, by professional biologists and highly trained technicians, is essential to visitor safety and resource protection.

The increase in visitor use over the years has resulted in an increase in vehicular traffic on the park's primary artery. In an attempt to reduce the impact to bears from increased vehicle use, the park established the visitor transportation system in the early 1970's. This is a shuttle bus system, designed to minimize disturbance to wildlife and to maximize wildlife viewing opportunities. It is not clear what impact use of the visitor transportation system has had on bear behavior along the road corridor. It is also impossible to establish biologically-sound use limits with our current level of knowledge.

In addition to the consequences associated with increased visitor use, bears are subject to harvest by subsistence and sport hunters within the 1980 new park additions and outside the park. A great deal of this harvest activity occurs on preserve lands and on state lands immediately adjacent to the park on the south side of the Alaska Range. National Park Service presence in this area prior to 1980 was minimal. Subsequently, the bear activities, population status, and extent of impact from this harvest is not well known.

When dealing with harvested populations, the ability to determine trends in population numbers and reproductive status is critical. Numerous efforts have been made to quantify the bear population within Denali National Park. Currently no method exists for management to readily and consistently obtain up-to-date and accurate numbers.

Current Management Actions and Results

Denali park staff have developed a bear-human conflict management program for the park (Stahlnecker 1994). This program has been the result of over a decade of experience, research, and consultation with other bear biologists. The goals of this program are based on management policies of the National Park Service and legislation which applies specifically to Denali. Specific goals are to (1) maintain the natural processes affecting the genetic integrity, distribution, abundance, and behavior of black and brown bear populations; (2) provide visitor safety by minimizing bear-human conflicts and the resulting personal injuries and property damage; (3) provide opportunities for visitors to understand, observe, and appreciate black and brown bears as part of an intact ecosystem; and (4) minimize management actions considered intrusive to bears. Currently bear management policy meets these goals by stressing preventive management as the first step toward problem resolution. Efforts are focused on identifying and resolving the causes of bear-human conflict through appropriate research, management, and public education.

Research, conducted by a U.S. Geological Survey-Biological Resources Division (USGS-BRD) research biologist, is underway to determine the status and trend of grizzly bears in the park and the primary factors affecting grizzly bear population dynamics. The research will also investigate an effective method to monitor populations throughout the park. Results of this research will assist in answering management questions concerning bear densities and population characteristics. Radio collars are used in this research.

Management of bears and people in Denali National Park should be based on sound scientific principles. Seasonal habitat selection, availability of natural foods, and distribution affect population dynamics and patterns of bear-human interactions. Scientific research is necessary to understand the relationship between bears and humans within the park and formulate management strategies to minimize conflicts. Monitoring population dynamics, movements, and density of black and brown bears, and the effects of hunter harvest, will provide information critical to the management of Denali National Park as a functioning ecosystem. Knowledge of population and behavioral change is needed to assist studies in progress on bear ecology, predator prey relationships, and the effects of traffic on wildlife use of the road corridor.

RECOMMENDED ACTIONS

A. Program Administration and Planning

N-364.201: Convert the Seasonal Wildlife Management Technician Positions to Permanent (Subject to Furlough) and Create an Additional Position

Extended seasons, from four months to seven months, for the wildlife technicians would facilitate end of season data entry and analysis, equipment repair and ordering, and report writing. Bear resistant food containers (BRFCs) would be adequately maintained. The extension of these positions would provide time for monitoring bear-human interactions on the south side of the Alaska Range during the spring snowmachine season, maintenance of a wildlife harvest data base for land adjacent to the park, and conducting bear education programs at local schools. Structuring these positions in such a way would provide continuity, facilitate positive relationships with inholders and local government agencies, and decrease the need to continually train new personnel in a highly complex and technical operation.

As visitor use activities continue to increase on the south side of the Alaska Range, one additional wildlife management technician will be needed to deal with the added bear-human conflicts that may occur.

N-364.202: Develop Cooperative Planning Agreement With Local Government Agencies

Contacts and agreements will be developed with the Denali Borough, Department of Transportation, Denali State Park personnel, and state regulatory agencies to implement food and garbage handling regulations and ordinances in areas outside the park and on private lands within the park. All regulations would be established to ensure no impact to the natural behavior of bears residing in the park. Methods would be developed to share information on the location and nature of bear problems and bear human interactions. If biological research indicates that subsistence or sport hunting activities within the 1980 park or preserve additions or on state lands adjacent to the park have an adverse impact on the bear population within the park, the Federal Subsistence Board or Alaska Board of Game would be encouraged to modify bear hunting regulations and bag limits on lands within and surrounding the park.

N-364.203: Maintain Adequate Training for the Wildlife Management Personnel

Bear control actions would be enhanced by the availability of sufficiently trained personnel and properly maintained equipment to safely and efficiently handle problem bears. Wildlife management personnel will be knowledgeable of bear behavior, shotgun qualified, and trained in the use of aversive conditioning techniques. They will be proficient in chemical immobilization and handling of bears. This will be accomplished by sending personnel to training with other parks or agencies as necessary. The park will coordinate with USGS-BRD research to maintain one permanent employee at a fully-trained park practitioner level. Personnel with adequate training and authorization to immobilize bears must be

available at all times to respond to bear incidents. A quick response to problem bear situations is critical to a successful management program.

N-364.204: Update the Bear-Human Conflict Management Plan Annually

The bear-human conflict management plan would be reviewed annually and updated as necessary to reflect areas of concern and current bear management situations. The plan would address evolving issues such as increasing activity and development on the south slope of the Alaska Range. Planning would encompass methods to determine and measure wildlife harassment by snowmachine users. The implementation of closures around critical areas such as den and kill sites would also be addressed on a parkwide basis.

N-364.205: Publish Summary of Bear/Human Conflict Program

Park staff has gained important experience and data on bear-human conflicts. This information should be synthesized and published to assist others with bear management programs.

B. Research

N-364.211: Coordinate Black and Brown Bear Research Program

Ongoing grizzly and black bear research will be supported by the park and encouraged to continue. Research efforts would be expanded to develop a park-wide, comprehensive, problem-oriented research program to provide management with knowledge of black and grizzly bear population characteristics. Emphasis would be placed on studying distribution and movements, behavior, human-bear interrelationships, and the impacts of management programs on the bear population within the park. Specific information will include seasonal habitat selection by bears in areas along the park road, in the backcountry, and south of the Alaska Range and the identification of areas with a high potential for bear-human conflicts. A habitat model would be developed to provide a more detailed picture of bear use and potential habitat. Some specific research problems include:

1. Integrate bear research with ongoing predator-prey studies and incorporate the role of all major predators and major prey species, taking a community approach to studying resource interactions throughout the park.

2. Determine what effect human activity, including garbage management, consumptive use, and backcountry hiking, is having on the bear population and movement patterns.

3. Model predator-prey and predator-predator interactions.

4. Determine the appropriateness, impacts to the bear population, and potential safety hazards associated with proposed in-park and near-park development.

N-364.212: Develop Bear Monitoring Protocols

Develop a monitoring protocol for evaluating bear population status and trend along the road corridor, the Stampede area, the south district, and in the preserve.

N-364.213: Recover Historic Data for Inclusion in Park Data Bases

Historic records from Murie, Dean, other researchers, bus drivers, wildlife observation cards, case incident reports, and interviews would be used to develop a picture of past wildlife population dynamics and distributions, and habitat use, along the road corridor. Whenever possible these data would be incorporated into park data bases and the park geographic information system (GIS). A document would also be prepared compiling the historic records

N-364.214: Investigate Road Use Disturbance to Bear Populations

See Road Use Impacts to Natural Resources DENA-I-670.

N-364.215: Develop Aversive Conditioning Techniques

A technique for delivering a capsicum-based spray, triggered by remote control, would be developed with professional-level oversight and direction by a Wildlife Biologist. Additional techniques will be developed and/or evaluated as opportunities occur.

N-364.216: Investigate Habitat Use and Population Status of Bears Occupying the South Side of Denali

In cooperation with the Alaska Department of Fish and Game and Denali State Park, habitat use and population status of grizzly and black bears on the south side of Denali would be investigated.

N-364.217: Support Independently Funded Bear Research Projects

The service will support independently funded bear research projects in Denali National Park by private and public organizations, agencies, and universities. The park would provide temporary housing and logistical support for field and laboratory work (Research Administration and Management DENA-I-410).

C. Mitigation

N-364.221: Remove Human Foods

The availability of BRFCs would be maintained to insure an adequate supply for all backcountry units. A BRFC program would be developed on the south side of the Alaska Range as the need arises due to increased visitor use. New BRFCs would be purchased each year to maintain a high quality stock. Bear-proof lockers would be maintained in developed campgrounds. Bear-proof food storage would be required at all NPS field camps. A proactive effort would be made to encourage local businesses inside and outside the park to conform with state regulations regarding food and garbage storage. Technical assistance would be provided to inholders and local businesses in developing secure food and garbage handling practices.

N-364.222: Implement Closure Procedure as Required in Bear-Human Conflict Management Plan

Based on procedures outlined in the bear-human conflict management plan and on monitoring results, closures would be implemented around den and kill sites as necessary. Implementation of necessary closures would counter harmful human disturbance of active bear dens and stop human activity from interfering with active kill sites. A commitment to long term, extensive monitoring of bear activity and den sites would be essential to implementing this mitigation action (DENA-N-364.205, DENA-N-364.231, and DENA-N-364.232).

N-364.223: Continue Current Experimental Aversive Conditioning

The wildlife management technicians would continue to aggressively use experimental aversive conditioning techniques under the oversight of a professional Wildlife Biologist. New techniques would be developed with professional-level oversight, evaluation, and direction (DENA-N-364.215). All actions would be carefully documented and evaluated to determine their effectiveness.

N-364.224: Develop Interagency Habitat Linkages

Denali National Park and Preserve biologists would coordinate with ADF&G and other adjacent land management agencies toward developing habitat linkages which would ensure a large, healthy, contiguous population of grizzly bears and black bears into the future.

D. Monitoring

N-364.231: Maintain Adequate Parkwide Monitoring of Human-Bear Encounters and Incidents

All visitors would be encouraged to report any bear incident to a uniformed National Park Service employee. Uniformed employees would interview the witness/victim and complete a bear information management system (BIMS) form used to monitor individual bears, bear activity, and bear management actions. The wildlife management technicians would provide training to NPS staff on the use of these forms. A computerized bear information and management system would be maintained to aid in the analysis and evaluation of the park's bear management program.

A monitoring system would be implemented to begin evaluating the effect of snowmachine use on wildlife during March and April on the south side of the Alaska Range. Efforts would also be made to obtain bear-human interaction data from the south district.

The wildlife technicians would record the locations of bear-human encounters and incidents as universal transverse mercator (UTM) coordinates suitable for entry in the park GIS.

N-364.232: Implement Annual Bear Monitoring Program

A technique would be developed (DENA-N-364.212) and conducted on a regular basis to gain information on bear population status and trends including densities, numbers, distribution, composition, age class, and productivity. Attempts would be made to duplicate previous survey efforts to allow comparability of data. Survey efforts would be coordinated with ADF&G Biologists to ensure complete and accurate reporting of population status within and adjacent to the park.

Data from surveys in the preserve lands would be used by park managers to evaluate sport harvest effects on bear populations. Data may be used to support changes in annual season and bag limit regulations as necessary.

N-364.233: Update Bear Information Management System Data Base

The suitability of data from the late 1970's to 1992 would be evaluated and added to the BIMS data base if appropriate. Where possible, the locations of past bear interactions would be recorded as UTM coordinates suitable for entry in the park GIS.

N-364.234: Track Alaska Dept. of Fish and Game (ADF&G) and US Fish and Wildlife Service Bear Management Decisions and Harvest Data on Adjacent Lands and in the Preserve

All bear management decisions would be monitored and input would be provided as appropriate. A data base would be maintained of wildlife harvest on lands adjacent to the park and in the preserve. An effective dialogue would be established with ADF&G staff and users to ensure data quality and continuity.

N-364.235: Gather Known Bear Data for South District

The wildlife technicians would monitor and gather data on den locations, concentrations of wildlife, and kill sites in the south district. The information sources would include local residents and users, and historic records and reports.

N-364.236: Implement Monitoring Protocol for Predation Events

N-364.237: Implement Berry Production Monitoring Protocol

N-364.238: Monitor Human Use Patterns

Human use activities, particularly backcountry use, would be tracked and analyzed on a regular basis to assist in determining areas with high potential for bear-human interactions.

E. Interpretation

N-364.241: Maintain Adequate Level of Public Information

Information about black and grizzly bears would be distributed throughout the park. All visitors obtaining campground permits or backcountry use permits will be given verbal and written warnings about black and grizzly bears. Adequate staff would be available at the visitor access center backcountry desk to provide information and record reports of bear-human interactions. An informative article about bear behavior and bear-human interactions will be published in the Denali Alpenglow. Interpretive activities will emphasize the potential hazards of bear-human interactions in a uniform fashion. The wildlife management technicians will provide training to the interpreters on disseminating the 'bear warnings'. Signs posted at developed campgrounds will advise campers about proper food and garbage storage. Special training about bear ecology and behavior will be required for all NPS and concession employees. As the wildlife technician function continues to evolve, their ability to assist with these duties will diminish. Funding is needed to provide seasonal interpretive support to accomplish these tasks.

F. Protection

N-364.251: Maintain Adequate Level of Regulation and Closure Enforcement

Protection of bears, their habitat, and public safety would be enhanced by evening campsite and overnight backcountry patrols in areas characteristic of frequent bear-human interactions. Campsites and backcountry areas that experience bear problems would be temporarily closed to protect visitors and minimize the need to manipulate bears. Closure signs would be constructed during the winter so supplies are always available. Protection of bears and their habitat would be enhanced by regulation enforcement throughout the park and preserve. Human disturbances near bear activity sites would be stopped when encountered by park rangers and resource personnel and the violations would be immediately reported to the Ranger Division. The park would utilize the Alaska Department of Public Safety, Division of Fish and Wildlife Protection's Violation Reporting Program to encourage visitors to turn in individuals intentionally harassing or disturbing bears and their prey. Information posters and pamphlets developed by the state for the Turn In Poachers program would be distributed in the park by NPS personnel. As the wildlife technician function continues to evolve, their ability to assist with these duties will diminish. Funding is needed to provide seasonal law enforcement support to accomplish these tasks.

STAFFING & FUNDING (1998)

PROJECT/ACTIVITY	YEAR01 ($1000/FTE)	YEAR02	YEAR03	YEAR04	SUBTOTAL
PROGRAM ADMINISTRATION					
- Inter-Agency Planning		50.0/0.1	25.0/0.1	25.0/0.1	100.0/0.3
- Training	10.0/0.0	10.0/0.0	10.0/0.0	10.0/0.0	40.0/0.0
RESEARCH					
- Coordinate Research	50.0/0.2	100.0/1.0	100.0/1.0	100.0/1.0	350.0/3.2
- Develop Monitoring Procedures	200.0/0.7	200.0/0.7	200.0/0.7		600.0/2.1
- Recover Historic Data	10.0/0.2				10.0/0.2
- Develop Aversive Conditioning	50.0/0.0	50.0/0.0			100.0/0.0
MITIGATION					
- Remove Artificial Foods	8.0/0.0	8.0/0.0	8.0/0.0	8.0/0.0	32.0/0.0
MONITORING					
- Monitor Bear/Human Interactions	60.0/1.2	60.0/1.2	60.0/1.2	60.0/1.2	240.0/4.8
- Monitor Bear Population		30.0/0.1	30.0/0.1	30.0/0.1	90.0/0.3
- Monitor Predation	10.0/0.2	5.0/0.0	5.0/0.0	5.0/0.0	25.0/0.2
- Monitor Berry Production	15.0/0.2	5.0/0.1	5.0/0.1	5.0/0.1	30.0/0.5
INTERPRETATION					
- Public Information	11.3/0.2	11.3/0.2	11.3/0.2	11.3/0.2	45.2/0.8
PROTECTION					
- Enforcement	14.0/0.3	14.0/0.3	14.0/0.3	14.0/0.3	56.0/1.2
TOTALS	438.3/3.7	543.3/3.7	468.3/3.7	268.3/3.0	1718.2/13.6

COMPLIANCE

All appropriate NEPA, NHPA, and ANILCA compliance documents will be prepared before initiation of any project and will be maintained on file at Denali National Park and Preserve headquarters.

REFERENCES

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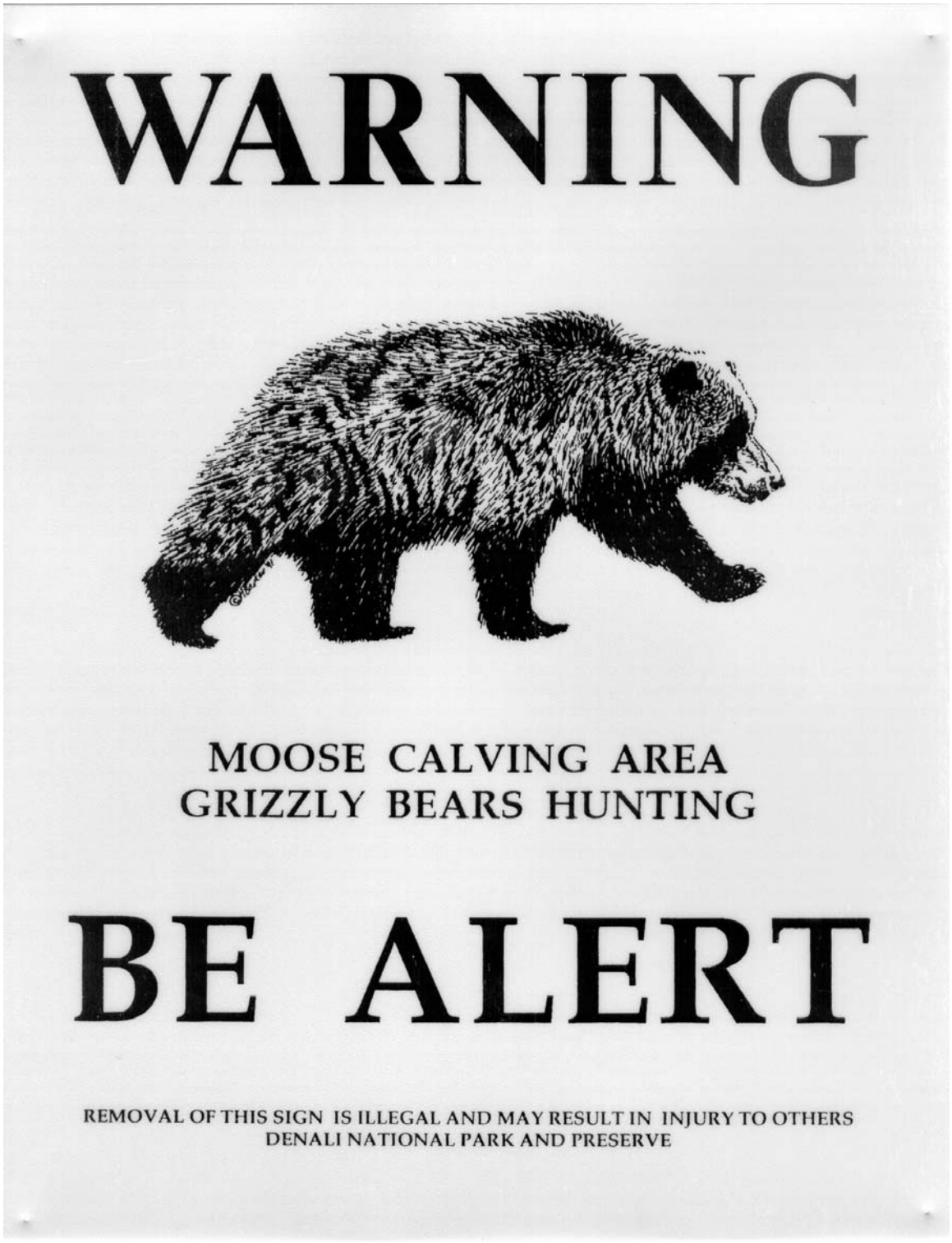
Appendix B. Approved Signs and Notices



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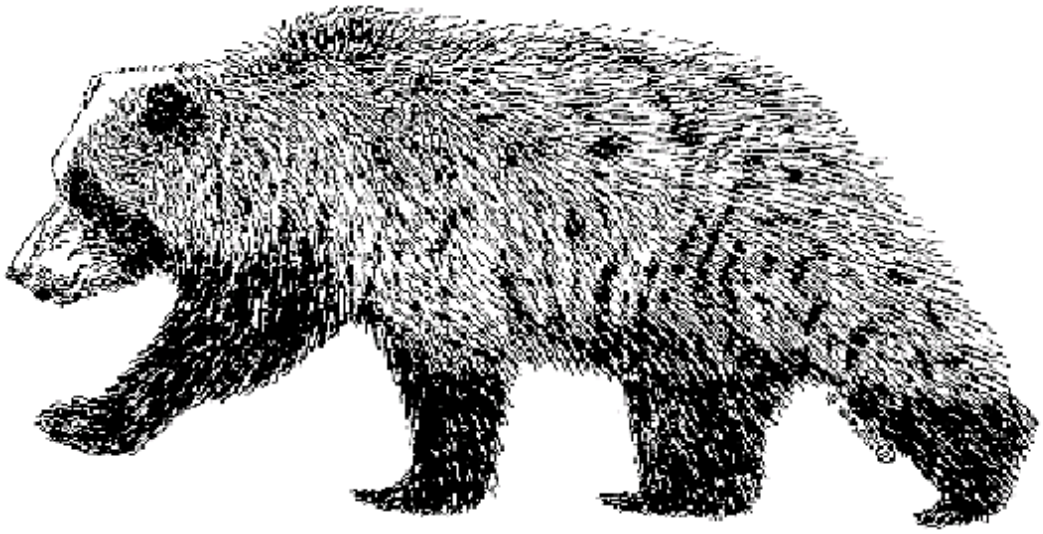


GRIZZLY FREQUENTING AREA

BE ALERT

REMOVAL OF THIS SIGN IS ILLEGAL AND MAY RESULT IN INJURY TO OTHER PERSONS

DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

WARNING
FOOD AND ODORS ATTRACT BEARS

The following items (new, clean, dirty, empty or full) may NOT be left outside, in tents, or in tent trailers at any time, DAY OR NIGHT, unless they are in immediate use! Store items in hard-sided vehicles (RV or auto) or in the food storage lockers located in this campground.

© Olaus Murie

Coolers / Ice Chests	**Stoves / Grills**
Trash or Trash Bags	**Food**
Beverage Containers	**Cosmetics / Toiletries**
Sealed Cans / Bottles	**Pet Food / Bowls**
Cooking Utensils	**Wash Basins**
Eating Utensils	**Any Item with Food Odor**

A violation may result in a $150.00 citation and confiscation of these items.

THE BEARS' FUTURE AND THE SAFETY OF OTHERS DEPENDS ON YOU!

K E E P W I L D L I F E W I L D

Never Feed or Approach Wildlife

Fed animals lose their wildness, may become unhealthy and often threaten people and property.

What You Can Do:

- Don't share your food with wildlife.
- Never leave food unattended, even for a short while.
- Properly dispose of garbage in bear-proof trash cans.
- Leave the area cleaner than you found it.

A violation may result in a **$150.00 fine**. *Title 36 Code of Federal Regulations, Section 2.2 (a)(2)*

AREA CLOSED

Entering a closed area or removal of this sign is punishable by

A fine of up to $500 or imprisonment for 6 months or both.

BEAR DANGER

U.S. Department of the Interior, National Park Service **GPO (1992)**

AREA CLOSED

CRITICAL WILDLIFE HABITAT

CLOSED TO ALL ENTRY

Entering a closed area or removal of this sign is punishable by

A fine of up to $500 or imprisonment for 6 months or both.

U.S. Department of the Interior, National Park Service **GPO (1992)**

Appendix C. Backcountry Use Permit

BACKCOUNTRY USE PERMIT

Denali National Park and Preserve
National Park Service
U. S. Department of Interior

Please keep this permit accessible while traveling, and display it on your tent once camp is established.

It is the responsibility of the trip leader and all trip participants to know and obey backcountry regulations and the following permit conditions. Violations may invalidate an entire permit and result in legal consequences.

- ☐ A valid backcountry permit is required for all overnight use in Denali Backcountry Units 1-43. It must be in your possession or displayed on your tent while in the backcountry.
- ☐ A backcountry permit is valid for only the dates, locations, and party members specified. Non-emergency deviation from the permitted itinerary, including delay of the start of a trip, is prohibited, and will invalidate the entire permit.
- ☐ A backcountry permit is valid only for overnight recreational activities. Any other use of the backcountry as an alternative place of residence is prohibited.
- ☐ Camping is prohibited within view of, or within ½-mile (0.8 km) of, all roads and developed areas.
- ☐ Entry into closed areas or disturbance of critical wildlife habitats such as denning areas or nesting sites is prohibited.
- ☐ In Denali Backcountry Units where Bear Resistant Food Containers (BRFCs) are required, all food, garbage, and scented items must be stored in BRFCs and placed at least 300 feet (90 meters) from camp. BRFCs must be returned, undamaged, within 48 hours of trip completion.
- ☐ All garbage, including sanitation products, must be packed out. Human waste must be buried 6 inches (15 cm) deep in soil and a minimum of 100 feet (30 meters) from water and 200 feet (60 meters) is recommended.
- ☐ Disturbance of wildlife, plants, antlers, artifacts, rocks, or any natural or cultural objects is prohibited.
- ☐ Fires, pets, or weapons are prohibited in the Denali Wilderness.
- ☐ All bear encounters, especially those with property damage or personal injury must be reported to a ranger.
- ☐ Commercial use is prohibited except by incidental business permit or concessions license.

Safety Warnings and Recommendations:

- ☐ Avoid bear encounters. Make noise while traveling. Never run from a bear. Read the Alpenglow section on bear safety.
- ☐ River and glacier crossing can be dangerous.
- ☐ Avoid hypothermia. Stay warm and dry.
- ☐ Know your group's limits and stay within them.
- ☐ Boil, filter, or treat your water to protect against Giardia and Crytosporidia.
- ☐ Practice Leave No Trace principles.
- ☐ Respect private property in Kantishna (Kantishna Advisory)

Signatures Date

Appendix D. Federal and State Regulations

REGULATIONS FOR FOOD STORAGE AND REFUSE DISPOSAL

Code of Federal Regulations

36 CFR 2.10(d) states "The Superintendent may designate all or a portion of a park area where food, lawfully taken fish or wildlife, garbage, and equipment used to cook or store food must be kept sealed in a vehicle, or in a camping unit that is constructed of solid, non-pliable material, ... or shall be stored as otherwise designated. Violation of this restriction is prohibited. This does not apply to food that is being transported, consumed, or prepared for consumption."

Superintendent's Compendium

2.10 Camping and Food Storage:
(b) Food Storage: Food, garbage, and equipment used to cook or store food must be kept sealed in a vehicle, or in a camping unit that is constructed of solid, non-pliable material, or secured in food storage lockers provided in each campground. Bear resistant food containers, (BRFC's), for backpackers are recommended for all backcountry zones, and are mandatory in most zones. This requirement may change according to management needs in line with the park's Bear/Human Conflict Management Plan. Use of containers will be governed by standard information given to all persons obtaining a backcountry use permit. Bear resistant food containers may be inspected by park rangers at any time to determine if food is appropriately stored and the unit properly sealed. Bear resistant food containers must be returned within 48 hours of returning from a backcountry trip. Failure to return the bear resistant food container within 48 hours of returning from a trip may result in a citation being issued. In forested areas, (when containers are not mandatory), food shall be suspended at least 12 feet above the ground and four feet horizontally from a post, tree trunk, or other object, and at least 300 feet down-wind and visible from tent sites. In treeless areas, food shall be placed, double wrapped in plastic, at least 300 feet downstream/hill from campsite. Additional details and recommendations on food storage can be found in the "Denali Alpenglow", the park's seasonal informational newspaper. Backcountry parties that have special needs due to size of their party, length of stay, mountaineering logistics, etc., must obtain permission of the North or South District Rangers, the Chief Ranger, or the Chief of Research and Resource Preservation to travel without BRFC's where otherwise required.

Alaska State Statutes

5 AAC 92.230 Feeding of Game.

No person may intentionally feed a moose (except under terms of a permit issued by the department), bear, wolf, fox, or wolverine, or intentionally leave human food or garbage

in a manner that attracts these animals. However, this prohibition does not apply to use of bait for trapping fur bearers or hunting black bears under 5 AAC 84 - 5 AAC 92.

History - Eff. 7/5/85, Register 95; am 8/20/89, Register 111; am 7/1/93, Register 126

5 AAC 92.410 Taking Game in Defense of Life or Property.

(a) Nothing in 5 AAC prohibits a person from taking game in defense of life or property if

(1) the necessity for the taking is not brought about by harassment or provocation of the animal, or by an unreasonable invasion of the animal's habitat;
(2) the necessity for the taking is not brought about by the improper disposal of garbage or a similar attractive nuisance; and
(3) all other practicable means to protect life and property are exhausted before the game is taken.

(b) Game taken in defense of life or property is the property of the state. A person taking such game shall immediately salvage the meat or, in the case of a black bear, wolf, wolverine, or coyote, shall salvage the hide and shall immediately surrender the salvaged meat or hide to the department. In the case of a brown bear, the hide and skull must be immediately delivered to the department. A surrendered hide and skull of a bear must be completely removed from the carcass. A surrendered bear hide must include attached claws. A person taking game under this section shall notify the department of the taking immediately, and within 15 days after the taking shall submit to the department a completed questionnaire concerning the circumstances of the taking.

(c) As used in this section, "property" means

(1) a dwelling, permanent or temporary;
(2) an aircraft, boat, automobile, or other conveyance;
(3) a domesticated animal;
(4) other property of substantial value necessary for the livelihood or survival of the owner.

History - Eff. 7/5/85, Register 95; am 8/20/89, Register 111; am 8/12/90, Register 115; am 7/1/94, Register 130

18 AAC 60.230 Solid Waste Management, State of Alaska Department of Environmental Conservation, Disease Vector, Wildlife, and Domestic Animal Control. As amended through October 29, 1998.

(a) The owner or operator of a facility subject to the permit requirements of AS 46.03.100 and this chapter shall manage the facility so that

(1) disease vectors do not endanger public health, safety, or welfare or create a nuisance;

(2) wildlife and domestic animals do not endanger public health, safety, or welfare; become harmed by contact with the waste; or become a nuisance; the requirements of this paragraph do not apply to a Class III MSWLF.

Appendix E. Summary of Individual Responsibilities for Implementing the Bear Human Conflict Management Plan

Superintendent

1. Responsible for approving the Bear-Human Conflict Management Plan and revisions.

2. Approves/disapproves the destruction of problem bears after consultation with the Assistant Superintendent of Resources, Science, and Learning, Wildlife Biologist, Chief Ranger, and District Ranger.

3. Approves or disapproves recommendations for temporary and emergency closures.

4. Informs inholders, and nearby neighbors of State and Federal regulations relating to food and garbage handling.

Concession Specialist

1. Ensures that agreements with concessionaires require bear proof facilities and handling practices for all garbage and food in the bus maintenance, store and concession residence, mercantile, and food court areas. The concessionaire must consistently comply with these requirements.

2. Incorporates requirements for bear proof food and garbage handling practices into all new and existing special use permits, business licenses, and concession contracts.

3. Contract Bus Driver Responsibilities Include:

    a) Include information regarding the Alpenglow bear article, current closures, and regulations pertaining to the feeding of animals, in initial message to passengers.

    b) Use Alpenglow bear article as reference when answering questions.

    c) Direct people who have been involved in an interaction with a bear to DENA staff.

    d) Ensure people remain on the bus when they are 1/2 mile of a bear.

    e) Report any bear-human interactions they may witness on the park road to DENA staff.

    f) Remain current on the locations of temporary and emergency closures. Informs the day hikers on the location of temporary and emergency closures.

4. Visitor Access Center Campground and Bus Desk Staff Responsibilities Include:

   a) Verbally inform all frontcountry campers that food, cooking utensils, and cosmetics must be stored in a hard sided vehicle or in a food storage locker.

   b) Point out the written version of the food storage requirements in the Alpenglow or on their campground permit.

   c) Ensure that all campers receive the "Camping and Bears" information.

   d) Direct people who have been involved in an interaction with a bear to DENA staff.

Ranger Activities Division

1. Chief Ranger

   a) Participate in cooperative decisions with Assistant Superintendent of Resources, Science, and Learning, Wildlife Biologist, District Ranger and investigating field personnel on the translocation or destruction of a bear.

2. District and Sub-district Rangers

   a) Supervise patrol rangers ensuring that they accomplish their specific responsibilities as outlined in the Bear-Human Conflict Management Plan.

   b) Initiates recommendations for temporary bear-human conflict related closures and notifies Dispatch when closures are established or lifted.

   c) In conjunction with field staff, make recommendations and participate in decisions for translocation or destruction of bears.

   d) Directs the enforcement of bear management regulations. Contacts State enforcement agencies when food or garbage handling problems occur in areas under State jurisdiction.

   e) A primary participant in bear management actions.

   f) Responsible for posting closure signs and other special bear related notices.

   g) Contact State Department of Environmental Conservation to determine if local businesses have current permits and have been recently inspected.

3. Patrol Rangers

a) At every opportunity, advises visitors of proper food storage procedures and appropriate behavior when near bears. Enforces pertinent regulations as necessary.

b) Alert for developing sanitation problems such as faulty garbage storage equipment, overflowing garbage cans, litter, etc. Makes emergency corrections, verbally reports and then documents in writing these problems for immediate, permanent correction.

c) Completes BIMS forms, immediately forwarding them to the Wildlife Management Technicians.

d) Patrols campgrounds at least once each evening to inform visitors of proper food and garbage handling procedures.

e) Patrols NPS and concession residence and recreation areas daily to ensure food or garbage are not left on porches or picnic areas.

f) Patrols the park's entrance area complex's garbage facilities; once during the day and once after 11 P.M., making sure dumpsters are closed, no garbage or litter is accumulating in the area, and all garbage containers are of a bear-proof design approved by the park. Documents compliance with standards on approved forms or in daily patrol logs.

g) Patrols park's garbage holding facility off Highway 3 at least three times a week, making sure gate is locked, electric fence activated, holding tank doors closed, and all garbage is securely contained.

h) Patrols Kantishna concessions garbage facilities, whenever possible and with the landowners permission; making sure dumpsters are closed, burn barrels are clean, no garbage or litter is accumulating in the area, and all garbage containers are bear proof. Ensures any outdoor food storage facilities are bear proof. Documents compliance with standards on approved forms or in daily patrol logs.

i) Conducts aerial and regular foot patrols of hotel, train station and Riley Creek area for illegal summer camps.

j) Remains alert for improper food and garbage handling practices by nearby neighbors, permittee, business license holders, subsistence users, and aircraft users at headquarters, Kantishna and other airstrips.

k) Document all non-compliance found during patrols in writing to supervisor.

l) Posts and enforces temporary closures, at supervisors direction when possible. Patrol Rangers may post closures on their own if the situation warrants. Follows closing procedure in appendix H.

m) Immediately informs District Ranger and Dispatch of all bear incidents and bears seen in developed areas.

4. Backcountry Sub-district Ranger

a) Maintain the data base on BRFC use on the backcountry computer.

b) Insure that the backcountry desk staff are providing bear safety information to all backcountry users.

5. Backcountry Desk Staff

a) Distributes the Alpenglow to all hikers and strongly recommends they read the bear safety article and view the backcountry video. If they speak French, German, or Japanese strongly suggests they view the foreign language slide program on backcountry safety. Provides the foreign language version of the bear safety brochure to French, German, Spanish, and Japanese speaking visitors.

b) Provide verbal warnings about bears and information on proper food and garbage handling to all persons receiving a permit. Documents this warning by checking off the "bears" section on the back of the permit (see Appendix C).

c) Distribute bear resistant food containers to backpackers and emphasize the need to close it properly and store it at least 100 meters from their campsite.

d) Asks all returning hikers about bear and wolf interactions and completes BIMS forms when appropriate.

f) Flag damaged BRFCs for the Wildlife Management Technicians to repair.

6. Mountaineering Rangers

a) Provides bear safety information to all backcountry travelers entering bear habitat. Provides the foreign language version of the bear safety brochure to French, German, Spanish, and Japanese speaking visitors. Provides, and encourages the use of, BRFC to all backcountry travelers on the south side of the Alaska Range.

7. Communications Center

a) Keep opening/closing log (Appendix H).

b) Immediately inform Wildlife Technicians, Wildlife Biologist, and District Ranger when an incident is reported.

c) Immediately inform Wildlife Technicians, Wildlife Biologist, District Ranger, and VAC and Eielson Visitor Centers, and others on the notification list (Appendix H.) of closures and lifting of closures of areas where incidents have occurred and of developed areas where bears have been seen. Also includes this information in morning reports.

8. Kennels Manager

Will provide detailed training on how to minimize wildlife sled dog interactions to anyone involved in the summertime dog walker program, and the winter dog sled patrol program.

9. Campground Hosts

a) Conduct patrols of the campground at least four times daily to check for food storage violation and inform visitors of campground regulations.

b) Move illegally stored food to food storage lockers, and inform patrol rangers, if campers are not present.

c) Record bear-human interaction on BIMS forms.

d) Inform Wildlife Management Technicians and Patrol Rangers of all reports of bear activity.

9. Alaska Public Lands Information Centers (APLIC).

a) Verbally inform campers that food and coolers must be stored in vehicles or in bear proof food lockers.

b) Point out campground regulation written on back of camping permit.

Center for Resources, Science, and Learning

Resources Division

1. Assistant Superintendent for Resources, Science, and Learning.

Insure that Division Chiefs review their division's responsibilities in implementing the bear-human conflict management plan every spring.

2. Wildlife Biologist (GS-12 - Branch Chief)

   a) Monitor impacts of management programs on bear populations.

   b) Test and review new methods of managing bear-human conflicts before they are implemented.

   c) Make recommendations and participate in decisions for translocation removals or destruction of bears.

   d) Determine release sites for bears designated for translocation.

   e) Provide recommendations for bear research, write proposals, assist with data analysis, manuscript production, and publication development.

   f) Make presentations at training and professional sessions.

   g) Arrange training sessions for proper techniques in chemical immobilization and wildlife handling for the Wildlife Technicians, as necessary.

   h) Develop and revise the Bear-human conflict management plan.

   i) Coordinate and annually evaluate the bear-human conflict management program.

2. Wildlife Biologist (GS-9)

   a) Oversee BIMS and other bear management/research records.

   b) Participant in bear management actions if necessary.

   c) Oversees the preparation of summaries and written reports of park's bear-human conflict management activities for the park, regional office and other agencies and organizations as necessary.

   d) Supervise Wildlife Management Technicians.

   e) Ensure that bear ecology and safety training is provided to DENA, concession and local business employees.

   f) Make presentations at training and professional sessions.

3. Wildlife Management Technicians

a) Maintain readiness and quickly respond, investigate and document incidents. Implements management actions according to this plan or supervisor's direction. Must be prepared to stay out in the Park for several days/nights at a time.

b) Maintain capture, aversive conditioning, telemetry, vehicle and other bear management related equipment in a ready condition at all times.

c) Coordinate training sessions on prevention of bear-human conflicts for DENA employees, concession employees and bus drivers at beginning of each season. Documents all training sessions for inclusion in annual report.

d) Coordinate with backcountry desk staff to maintain a supply of BRFCs and data forms. Checks with desk staff at least twice a week for BIMS forms and damaged BRFCs.

e) Repair BRFCs as time permits. Attempt to track down overdue containers.

f) Make spot checks of hotel, campgrounds, landfill, work camps, and other facilities for garbage problems and to see that garbage handling equipment (barrels, dumpsters) are in proper working order. Cooperate and share information with patrol rangers on garbage problems and actions taken to correct problems. Documents all problems or actions.

g) Post closure or warning signs as stated in closure procedures in appendix H.

h) Compile and analyze bear-human conflict data and draft annual reports.

i) Monitor kill sites, keep track of predatory events.

j) Order and maintain supply of Denali bear safety information brochures, and closure and warning signs.

k) Complies biweekly bear activity updates and distributes them to park staff and park partners (see notification list in Appendix H.) Include recent bear incidents, unusual encounters, other noteworthy wildlife activity.

3. Drug Practitioner (Usually one of the Wildlife Biologists)

a) Purchases, maintains inventories and distributes drugs to field areas.

b) Coordinates and teaches annual drug related bear management and handling training sessions.

c) Responsible for immobilization and capture equipment.

4. Environmental Specialist/ Compliance & Geologist

    a) Ensure that all mining plans of operation and other environmental documents have stipulations regarding park and/or state requirements for food and garbage handling.

5. Subsistence Specialist

    a) Inform subsistence users of state and federal regulations relating to food and garbage handling.

6. Research coordinator

    a) Informs all investigators, conducting research, of State and Federal regulations relating to food and garbage handling.

Interpretive Division

1. Supervisors

    a) Inform the Park's visitors of the bear situation at evening programs, visitor centers, on guided walks and during informal public contacts.

    b) Consult with Wildlife Biologist and the Wildlife Management Technicians in preparation of books, pamphlets and other materials on bears and ways to minimize bear-human conflicts.

    c) Maintain supplies of Alpenglow at the Visitor Center, Eielson Visitor Center, The Savage Check Station, The Science and Learning Center.

    d) Responsible for initial posting and maintenance of bear behavior information on bulletin boards.

2. Field Staff

    a) In all programs and guided walks interpreters will comment on the potential for bear-human conflict and recommend specific behavior to minimize the potential for conflict.

    b) In introductory remarks to guided walks, discuss the group's action if they encounter a bear.

    c) Spend a few minutes talking about bears if a program is canceled due to bear activity in an area.

d) Talk with people about food and garbage handling practices during pre-program walks around campground.

e) Eielson Visitor Center staff will follow Bear Protocol for EVC in appendix L.

f) Eielson Visitor Center staff will record all bear observations within a 1/4 mile area of Visitor Center.

g) Record all bear-human interactions they hear about from visitors or other staff on BIMS forms.

h) Maintain the backcountry video and other automated information programs at the VAC.

Maintenance Division

1. Facility Manager

a) Ensures that all contracts for construction or maintenance projects contain Park and/or State stipulations on proper food and garbage handling. Coordinates with Wildlife Biologist and District Ranger to provide training for contractor's employees on proper behavior in bear country.

2. Buildings and Utilities Foreman

a) Maintain park garbage system in a bear proof condition at all times. Any inadequacies or system failures are considered health/safety problems and will receive immediate priority consideration in the work program.

b) Maintain regular program of container cleaning, maintenance and cyclic replacement.

c) Maintain the fence around garbage holding facility on Highway 3 in bear-proof condition.

d) Provide regular litter patrols along roads, around developed areas and areas where people congregate. Provide additional patrols as necessary to ensure a trash-free environment.

3. Garbage Collectors and Caretakers

a) During summer, check cans in all visitor use areas daily and housing areas three times a week. Empty cans if half full or if they emit a strong odor, replace with clean plastic liner.

b) No garbage shall be stored overnight, except in the approved transfer chute on highway 3, in the approved garbage trucks or compactors with doors fastened shut, or in closed, hard-sided buildings.

c) Ensure bear proof can lid is correctly seated on top of can.

d) Pick up any litter seen along roads, in turnouts, accumulation around garbage cans or any other area. Eielson caretaker will patrol porches and picnic areas around V.C. for small food scraps and litter at least 3 times a day. Toklat caretakers will pick up around Stony, Toklat and Polychrome rest areas daily. Teklanika caretakers will pick up around the Teklanika rest stop.

e) Close and fasten the doors to the transfer chute in the former landfill facility east of Highway #3. Close the gate to the facility, and activate the electric fence whenever area is used.

f) Immediately report faulty containers, containers needing cleaning or oversights in the current garbage handling system that could minimize its effectiveness in preventing bear-human conflicts.

Other Responsibilities

a) All supervisors (concession and Park) will ensure their employees are aware of the Park's bear management objectives and the methods being used to achieve those objectives.

b) All employees are responsible for correcting deficiencies in garbage handling, and food storage as they become aware of them or to call them to the immediate attention of someone who can correct them. If informal communication does not result in prompt correction, the recommended action or statement of problem will be given to a higher level supervisor and the Wildlife Biologist.

c) All park divisions and functions will coordinate their respective bear management needs through the Wildlife Biologist.

Appendix F. Guidelines for Use of Bear-Resistant Food Containers

Bear Resistant Food Containers (BRFCs) have been used since 1982 and have helped to reduce the number of bear incidents in the backcountry of DENA by 95%. The BRFC program is one of the cornerstones of Denali National Park and Preserve's bear human conflict management program. Fewer animals obtaining food decreases the chance of property damage, injury, and the destruction of bears. The Wildlife Management Technicians are responsible for ensuring adequate supply of BRFC's is available throughout the season.

VISITOR USE OF CONTAINERS

1. BRFCs are mandatory for backpackers in **all units** except 22, 23, 44 – 48, and 61 – 87 backcountry in the 1980 park additions and Preserve. There is no overnight use of backcountry units without a container in mandatory units. Mountaineers may spend the night in unit 20 without a BRFC to access mountaineering areas, or when traversing the Alaska Range.

2. Containers are recommended for units 22, 23, and backcountry in the 1980 park additions and Preserve. Judgement should be exercised in distributing containers in order to have them available for the mandatory backcountry units at all times. See Appendix Q. for BRFC status in each backcountry unit.

3. Individuals/groups unwilling to use the containers will be referred to areas where containers are not mandatory.

4. Mountaineering parties will have the following special regulations:

    - All parties will be given a food storage briefing and a bear safety orientation.

    - Mountaineering parties may not be required to carry BRFCs in unit 20, but will always be encouraged to use them.

    - Parties starting their trip from the Kantishna area may obtain a BRFC from the Wonder Lake Rangers. Arrangements can be made in advance with the Backcountry Sub-district Ranger.

    - The Talkeetna Ranger Station will keep a supply of containers to issue to parties that are crossing the range south to north.

5. Large Groups (15 people or more) that have been given exemption from the quota system (i.e. NOLS or the Sierra Club) will be required to carry BRFCs.

WEST END DISTRIBUTION

BRFCs will be available for visitors and/or west end employees in the Wonder Lake Sub-district. BRFCs will be located in the Wonder Lake Sub-district Office, at the Toklat Road Camp, and at the Wonder Lake Ranger Station. Backcountry and Road Patrol Rangers will be responsible for checking out these BRFCs.

All procedures for check out to visitors remain the same. The VC must be notified by the Wonder Lake Sub-District Staff if the container is going to be returned to the VC instead of in the Wonder Lake Sub-district.

DENA EMPLOYEES

The following positions may check out a container for longer lengths of time (i.e. the summer season) from their respective divisions, for official use: Backcountry Rangers, Wildlife Management Technicians, and Resource Management personnel on extended field work. These divisions also have their own supply of BRFCs. Administrative supplies of BRFCs are not to be used for recreational purposes. NPS employees using the backcountry on their lieu days are required to check out BRFCs from the backcountry desk and return them in a timely manner.

CONCESSION EMPLOYEES

Employees of local area businesses must check out BRFCs and return them in a timely manner. Their place of employment will be listed on their backcountry permit and stored on the backcountry permit computer.

OVERDUE AND LATE CONTAINERS

A BRFC is considered overdue two days past its due date. The Wildlife Management Technicians are responsible for locating overdue BRFCs. Local employees will be located through the personnel offices of their place of employment.

Any individual returning a BRFC late three times during one summer will result in the denial of backcountry permits for the remainder of the season. Visitors and employees that loose their BRFCs will be asked to replace them. The containers for sale at the Alaska Natural History Association outlet will be suggested as a replacement source. Visitors who have lost their containers may be issued a bill of collection. Late returns and losses of BRFCs are citeable offenses under 36CFR 2.10.

Appendix G. Documentation, Forms, and Form Guidelines

INTERVIEWING SUGGESTIONS

Try to obtain the following information using the forms and guidelines outlined in this appendix when interviewing a person who has been involved in a bear-human interaction.

Use a BIMS form as an outline for your interview.

Get the most precise location of the interaction. Question the person about details (i.e. how long did it take to walk to the site, landscape features in the immediate area, points from which the site might be visible). Remember the information gathered from this interview may provide the only directions to the site of the interaction. Be alert for inconsistencies in time, distance and topography. People unfamiliar with the area are often very confused about exact locations, so clarify this with questions from different angles. Work with a map and your knowledge of the area.

Get a good description of all the actions and reactions that took place before, during and after the interaction. Emphasize times, distances, physical setting, vegetation, wind direction, etc, in your questioning. What did the bear do? What did the people do? What did the bear do next? What did the people do next?

What is the current situation? When the people left camp was the bear still in the area? Is a dropped pack still in the backcountry? Are the tent and food still at the site?

Did the bear obtain food? How was it stored? Are you sure the container lid was properly fastened? You need to be specific.

Who was involved? Get addresses, but also try to find out where people involved in the incident might be staying for the next few days and how they can be contacted.

What type of prior information from the park did the people involved receive about bears? Were they given verbal and written information? Did they see signs? Did bus drivers, backcountry rangers, or interpreters advise them of current bear activities or closures?

Covering these points completely in conjunction with a BIMS form should provide the critical initial information required for determining what management responses might be necessary.

BIMS INSTRUCTIONS

1. Carry a few BIMS forms at all times.

2. Fill in <u>all</u> sections, except those marked "management use".

3. Use BIMS for all:

    a) Bear-human interactions when people are on foot and the bear is aware of them

    b) Property damage, injury, food and garbage incidents, including a bear unsuccessfully trying to get into a garbage can or vehicle.

    c) Observations of bears seen within 0.4 km (1/4 mile) of developed areas (campgrounds, visitor centers, building complexes).

    d) Bear handling and management actions.

4. Observations from vehicles farther than 0.4 km from developed areas do not need to be reported on BIMS. Observations made away from vehicles do not need to be on BIMS if the bear was apparently unaware of the people. Observations inappropriate for BIMS can be described on index or natural history cards. These are especially important if the observation is unusual, such as predatory activity, sow with cubs of the year, or several bears seen in one area on one day.

5. Do a separate BIMS for each separate interaction (incident, encounter, observation, or control). For example, if a bear damages tents in 2 campground sites in one night, two separate BIMS should be completed.

6. Management actions- Use the same Case Incident Number for all controls related to a particular bear.

7. Give BIMS forms to Wildlife Management Technicians promptly.

8. Wildlife Management Technicians will enter BIMS data into the BIMS database.

Case Incident Form #10-343 will be completed for all incidents involving an injury or property damage. The 10-344 can also be used to record additional narrative information for BIMS report. Copies of all these forms should be attached to the corresponding BIMS form. Give forms to supervisor and Wildlife Management Technicians promptly.

BIMS FORM

21. WHERE DID YOU LEARN TO BEHAVE IN BEAR HABITAT?

A. Park interpretive program
B. Backcountry video
C. Park ranger
D. Park newspaper
E. Posted warnings
F. Previous knowledge
G. Books
H. No information received

22. DESCRIPTION OF BEAR-HUMAN INTERACTIONS:
(Please describe what happened.)

23. REPORT COLLECTED BY:_____ (NPS Staff)
Date: _____

MANAGEMENT USE ONLY

1. Record number_____
2. Case incident _____
3. UTM East:

___ ___ ___ . ___

UTM West:

___ ___ ___ ___. ___

Entered by:_____

4. Bear Behavior:
A. Intolerant
B. Curious
C. Mistaken prey
D. Dominance
E. Surprise
F. Provoked
G. Tolerant
H. Conditioned
I. Rewarded
J. Threat
K. Predation
L. Indeterminate

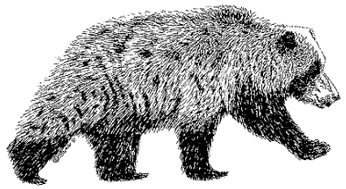
5. Management Rating:
A. Observation
B. Encounter
C. Incident; General
D. Incident; Gets food
E. Incident; Prop.Damage
F. Incident; Injury

Control Action:
G. Relocation
H. Aversive Cond.
I. Destruction
J. Removal
K. Hazing

b. RR Depot
c. Concessionaire Housing
d. C-Camp
e. Headquarters Area
o. Polychrome Rest Area
p. Teklanika Rest Area
q. Stony Hill Overlook
r. Eielson Visitor Center

BEAR INFORMATION MANAGEMENT DENALI NATIONAL PARK and PRESERVE

1. PEOPLE INVOLVED:



Name: _____
Address: _____
City: _____ State/ Prov: _____
Country: _____
Zip Code**:** _____

2. GROUP TYPE:
A. Park Visitor
B. Concession Employee
C. NPS Employee
D. Professional Photographer
E. Contractor/ Researcher
F. Kantishna Resident/ Employee
G. Mountaineer/ Climber

3. VISITOR ACTIVITY:
A. Backcountry camping (overnight hiking)
B. Day-hiking in backcountry
C. Walking on road
D. Hiking on maintained trail
E. Driving on road
F. Camping – developed campground
G. Other _____

4. GROUP SIZE: _____

(number of people that encountered the bear)

5. TIME OF ENCOUNTER: Month: _____ Day: _____ Year: _____ Time: _____ am/pm

6. LOCATION OF ENCOUNTER: _____
(Mark exact location on map if possible.)

A. Backcountry Unit Number**:**_____

B. Developed area: a. Riley Creek Campground
n. Entrance Area Trails
f. Savage Campground
g. Sanctuary Campground
h. Teklanika Campground
i. Morino Campground
s. Wonder Lake CG
t. Toklat Roadcamp
u. Igloo Campground

.

7. DESCRIPTION OF BEAR(S):		**8. Second bear**	**9. Third Bear**	**10. Fourth Bear**
A. Species:	1.Grizzly	1. Grizzly	1. Grizzly	1.Grizzly
	2.Black bear	2. Black bear	2. Black bear	2. Black bear
	3. Unknown	3. Unknown	3. Unknown	3. Unknown
B. Color:	1. Blond	1. Blond	1. Blond	1. Blond
	2.Light brown	2.Light brown	2.Light brown	2. Light brown
	3. Med brown	3. Med brown	3. Med brown	3. Med brown
	4. Dark brown	4. Dark brown	4. Dark brown	4. Dark brown
	5. Black	5. Black	5. Black	5. Black
	6. Unknown	6. Unknown	6. Unknown	6. Unknown
C. Size:	1. Small	1. Small	1. Small	1. Small
	2. Medium	2. Medium	2. Medium	2. Medium
	3. Large	3. Large	3. Large	3. Large
	4. Unknown	4. Unknown	4. Unknown	4. Unknown
D. Age:	1. Spring cub	1. Spring cub	1. Spring cub	1. Spring cub
	2. Yearling	2. Yearling	2. Yearling	2. Yearling
	3. Sub-adult	3. Sub-adult	3. Sub-adult	3. Sub-adult
	4.Adult	4. Adult	4. Adult	4. Adult
	5. Unknown	5. Unknown	5. Unknown	5. Unknown
E. Sex:	1. Male	1. Male	1. Male	1. Male
	2. Female	2. Female	2. Female	2. Female
	3. Unknown	3. Unknown	3. Unknown	3. Unknown
F. Collars, tags, etc.:	_____	_____	_____	_____
	_____	_____	_____	_____
	_____	_____	_____	_____

11. VEGETATION TYPE:

A. Open Tundra
B. Gravel river bar
C. Forest
D. High brush (taller than 3' or 1m)
E. Low brush (shorter than 3' or 1m)
F. Road

12. WHAT WAS THE BEAR DOING WHEN YOU FIRST SAW IT?

j. Park Road/ Roadside Mile #_____
k. Kantishna Developed Area _____

l. Wonder Lake Day Use Area _____
m. Other Locations _____

13. WHAT WERE YOU DOING <u>BEFORE</u> YOU SAW THE BEAR?

A. Sleeping
B. Eating/cooking
C. Hiking
D. Running
E. Sitting
F. Photographing
G. Setting up/Breaking camp
H. Other_____

14. HOW DID THE BEAR REACT TO YOU?

A. Not aware of people
B. Stood on hind legs
C. Growled/woofed/made noise
D. Walked away
E. Ran away
F. Ran towards people
G. Remained in area ignoring people
H. Watched people
I. Walked towards people
J. Circled around people
K. Bluff charged
L. Made contact with person
M. Investigated equipment/property
N. Other_____

15. WHAT DID YOU DO THEN?

A. Walked away/ backed away
B. Ran away
C. Remained still/quiet
D. Continued hiking same direction
E. Used pepper spray
F. Made noise (talked, yelled, banged pots)
G. Threw something at bear
H. Photographed bear
I. Abandoned property (pack, tent, gear)
K. Other _____

16. HOW DID THE BEAR REACT?

A. Walked away
B. Ran away
C. Walked towards people
D. Ran closer
E. Remained in area ignoring people
F. Stood on hind legs
G. Watched people
H. Circled around people
I. Bluff charged
J. Made contact with person
K. Investigated property
L. Other _____

17. HOW CLOSE DID YOU COME TO THE BEAR? _____

18. WAS HUMAN FOOD PRESENT?

A. No food present
B. Food in BRFC
C. Food odor only
F. Food hung in tree
G. Food outside BRFC
H. Unknown

19. WAS HUMAN FOOD EATEN BY THE BEAR? A. No B. Yes (what?)_____

A. Feeding on vegetation
B. Feeding on carcass
C. Hunting
D. Digging
E. Standing
F. Resting
G. Breeding
H. Walking towards people
I. Running towards people
J. Running away from people
K. Traveling
L. Playing (with _____)
M. Investigating property
N. Other _____

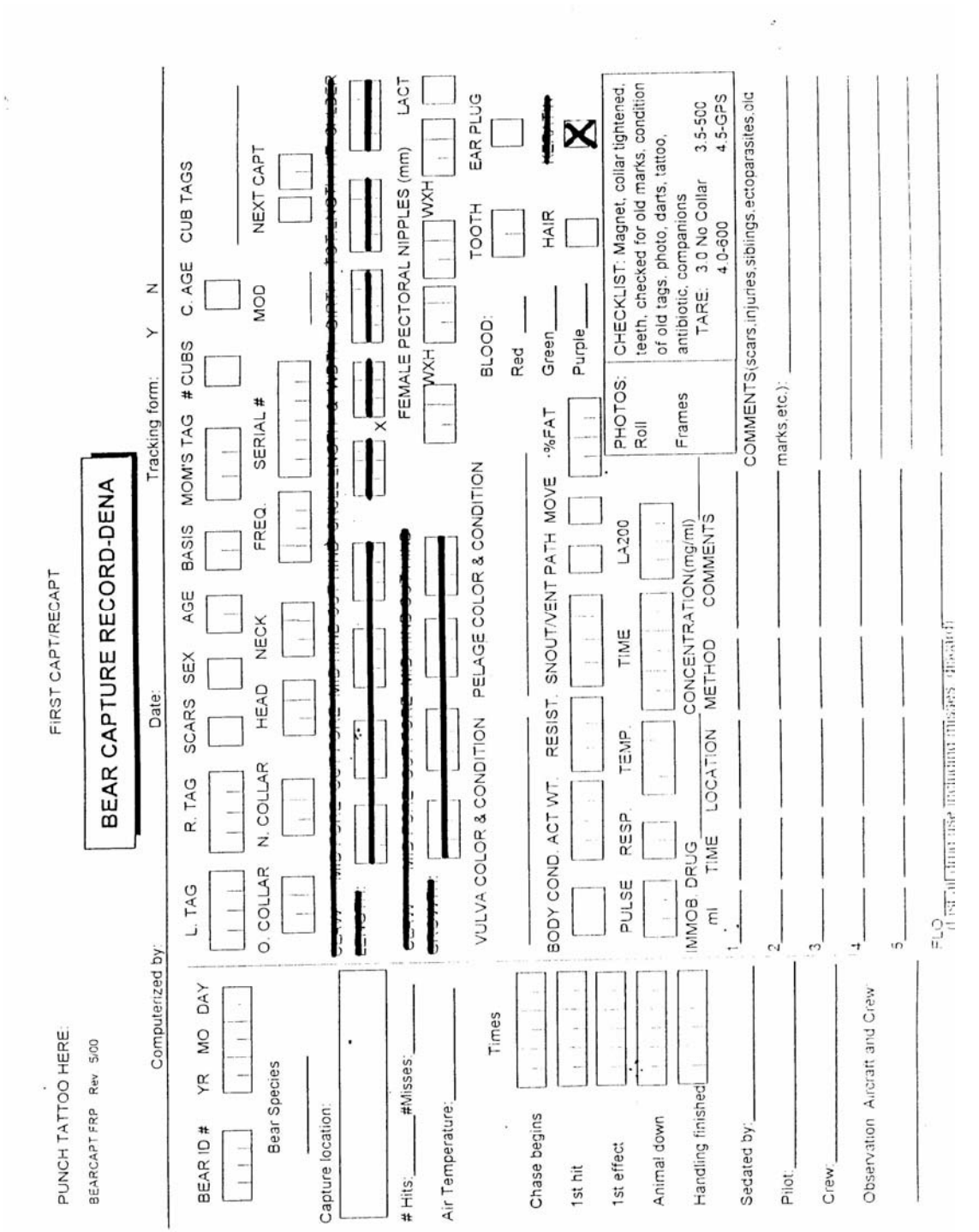
(During this encounter.) C. Unknown

20. WAS PROPERTY DAMAGED? A. No B. Yes (list property and estimate costs)

_____

BEAR FIELD DATA FORMS

These form will be completed during any chemical immobilization and control actions. Any immobilization attempt, whether successful or unsuccessful, must be recorded to maintain a complete record of drug use. Forms will be kept in the Resource Management files.



DENALI NATIONAL PARK AND PRESERVE BEAR MANAGEMENT

CONTROL ACTION

BIMS Data Base Record #: **Date** **Time**

Location (include UTM:

Description of Bears:

People Directly Involved:

Describe the initial situation:

Type of Action (circle): Hazing Aversive Conditioning Translocation Euthanasia

	# Hits	# Miss	# Unknown	Distance
Cracker Shell				
Rubber Slug				
Bean Bag Round				
Rifled Slug				
Pepper Spray				
Paint Pellet				
Other				

Describe control action and bear's reaction:

BIMS Record # of previous control actions involving this bear(s):

Did the bear(s) return to the area after this control action? Y N

BIMS Record #(s) of subsequent control actions involving this bear(s):

Appendix H. Closure Procedure

PUBLIC USE CLOSURES RELATED TO RESOURCE CONDITIONS

Revised July 8, 2003

Introduction

Title 36, Code of Federal Regulations, Part 1.5 authorizes the Park Superintendent to establish public use closures in the interest of maintaining public health and safety, protecting environmental and scenic values, and protecting natural and cultural resources. Within the context of natural and cultural resources preservation and natural hazards management this closure authority most often extends to the following situations:

- Wildland Fires
- Hydrogeologic Events such as floods, mud/rockslides or earthquakes
- Severe Storms
- Wildlife Activity such as den/nest sites, prey kill sites, or areas near potentially hazardous animals

It should be noted that this is not a complete list of circumstances that can determine the establishment of a closure or use limit.

Closures and use limits are generally categorized as permanent or non-permanent. The primary distinguishing feature between the two is the anticipated duration of the use limit. **This directive deals solely with non-permanent closures and is separated into sections dealing with EMERGENCY and TEMPORARY closures.**

EMERGENCY CLOSURES

Emergency situations are recognized to immediately threaten public health and safety and will not last longer than 30 days. These closures may not be extended.

Recommendations for emergency closures related to resource conditions are expected to originate from field rangers and field resource management staff.

Procedures:

1. Determine that a closure is necessary. DO NOT proceed to implement a closure on hearsay.

2. Field rangers should make a reasonable attempt to contact their Subdistrict Ranger and field resource management staff should make a reasonable attempt to contact the Wildlife Biologist or their supervisor. Supervisory individuals will make recommendations on how the closure will be designed, implemented and terminated. Supervisory individuals will then

contact the Superintendent or acting superintendent for approval (and signature). The Communication Center will maintain a schedule of who has acting Superintendent authority during the Superintendent's absence.

Normally these contacts would not be made between 10PM and 7AM. If, however, the circumstances are serious enough, contacts should be made at any hour at the discretion of the field staff.

3. If the Subdistrict Ranger and/or the Wildlife Biologist are not available, field employees will contact the Superintendent and or the Acting Superintendent and make the recommendation for emergency closure. The Superintendent or Acting Superintendent will make the determination that a closure is needed. **If no contacts can be made (Comm. Center closed or no radio contact) and field staff determines the closure is necessary for human safety, proceed with signing the closure. Field staff will make the appropriate closure at the earliest opportunity.**

4. Once the Superintendent or Acting Superintendent approves a closure, notify the Communication Center. Be prepared to provide the following information: requestor, place name for the closure (assigned by the field staff), purpose and justification, location, and description of the perimeter. A map will be prepared and provided to the Communication Center as soon as possible after the determination to implement a closure.

5. The Communication Center will be responsible for assigning a closure number, preparing a closure notice, and advising all parties identified on the Notification List below.

6. Proceed with the closure by posting the appropriate signs.

7. Prepare a written Case Incident Report Form (SF-344), and have the Superintendent or his designee sign it. Then process it with the Communication Center. Include a map or diagram of the closed area and source point (kill site, etc.). Case Incident Reports should follow the format provided below.

8. Immediately following receipt of the Case Incident Report, the Communication Center will forward it to the Superintendent and the Chief Ranger.

9. The Wildlife Biologist and/or the Field Ranger will coordinate the monitoring and subsequent opening of the closure. Determination of this responsibility will be made during Step 2 above.

10. Openings (See Opening Procedures below)

TEMPORARY CLOSURES (These closures are non-emergency in nature)

Non-emergency situations do not pose an immediate threat to public health or safety but focus on preservation of park resources or may be implemented to expedite park operations. These closures will not last longer than 12 months and may not be extended.

Recommendations for non-emergency closures related to resource conditions are generally expected to originate from District and Subdistrict Rangers, Maintenance Foremen, Division Chiefs, and employees within the Center for Resources, Science and Learning. On occasion, cooperating investigators may submit closure proposals.

Procedures:

1. Contact the Wildlife Biologist prior to preparing a recommendation to avoid duplication of effort.

2. Recommendations for all non-emergency wildlife related closures are to be submitted to Wildlife Biologist in writing.

The written recommendation will be submitted on a Case Incident Report Form. Include a map or diagram of the closed area and source point if possible (fox den, etc.). Case Incident Reports should follow the format depicted below. Please be specific regarding the geographic locations and the justification for the action. The originator is responsible for assigning a place name to the closure recommendation and for receiving a Closure Number from the Communication Center.

3. Recommendations will be forwarded to the Director, Center for Resources, Science and Learning who will submit them to the Superintendent (copy to the Chief Ranger) for consideration and signature.

4. If the Superintendent concurs, the signed Case Incident Report will be forwarded to the Communication Center. This report will include maps and/or geographic descriptions of the area(s) to be closed. The Communication Center will forward a copy of this report to the Director, Center for Resources, Science, and Learning and the Wildlife Biologist.

5. The Communication Center will be responsible for advising all parties identified on the Notification List. The Wildlife Biologist will be responsible for updating the master map, and for making the map available to parties on the Notification List.

6. If the Superintendent rejects the recommendation, the Director, Center for Resources, Science and Learning will be promptly advised. The Wildlife Biologist and staff initiating the closure proposal will also be promptly notified.

7. The Ranger Activities Division and the Wildlife Biologist will coordinate posting the area with appropriate signs per maps received from the Communication Center's signed copy of the Case Incident Report. It is important to realize that maps associated with original recommendations may not reflect what the Superintendent eventually agrees to. Consult final determination documentation. A minimum requirement / tool analysis for any signs posted within the Wilderness is required.

8. The Wildlife Biologist and the Ranger Activities Division will coordinate the monitoring and subsequent opening of the closure, providing regular feedback throughout the process. The ultimate responsibility for monitoring will rest with the Wildlife Biologist.

9. Openings (See Opening Procedures below

OPENINGS

Openings of Emergency Closures are made only after a site has been physically inspected.

If employees are entering a potentially hazardous closed area, they are to advise the Communication Center of their entry and exit.

If a kill site is involved, two employees armed with shotgun(s) will be involved in the inspection.

Procedures:

1. Before entering a closure, individuals should confer with the Wildlife Biologist. The purpose of this consultation is to determine the appropriateness of the opening and whether additional information is required from the closure area.

2. Before opening a closure (and removing closure signs), the Wildlife Biologist will make a reasonable attempt to obtain oral or written concurrence from the Superintendent or Acting Superintendent. The communication center can facilitate this contact. If this concurrence cannot be obtained in advance and field conditions warrant, proceed with the opening.

3. Notify the Communication Center of all openings. The Communication Center will be responsible for advising all parties identified on the Notification List.

4. Oral recommendations for lifting closures are to be followed-up, as soon as possible, with a written Case Incident Report Form and processed with the Communication Center. These reports should follow the format provided for a closure opening recommendation. The Communication Center will forward a copy of this report to the Wildlife Biologist.

5. The inspecting party will be primarily responsible for removal of all signing. Coordination should occur between the Center for Resources, Science and Learning and the Ranger Activities Division to assure efficiency in sign removal.

Status of Closures

The Communication Center will maintain a running log and complete file of all closures and openings. A Closure Update Report will be completed by the Communication Center and distributed to all parties on the Notification List when closures change.

Backcountry Unit Maps

A Backcountry Unit Map, indicating minimum closure areas, will be prepared by 15 April of each year. The map legend will note in bold letters that only those areas so outlined and shaded are closed. Closure boundaries will be printed in such a fashion that they will not be confused with other features on the map. This map will also serve as the Backcountry Unit Map and will include narrative pointers regarding closures and travel around them. This map will serve as a master copy and will be maintained as part of the geographic information system in the Center for Resources, Science and Learning. The master will be updated as closure boundaries change throughout the course of the season. Copies will be made of the master, as updates occur, and will be supplied to all backcountry users. The Wildlife Biologist is responsible for original map preparation and subsequent closure boundary updates. This map will be available to the Backcountry Desk at any time and will be distributed to all parties on the Closure Notification List when closures change.

USGS Topographic Maps

When documentation for emergency closures or justifications for other temporary closures is prepared it should include a map (1:63,360) depicting closure boundaries. Once final closure determinations are made they should include similar maps (1:63,360) with approved closure perimeters. Copies of these maps will be maintained in the Communication Center, Center for Resources, Science, and Learning Files, and the Backcountry Desk for reference purposes.

A master set of these maps will be maintained in the Center for Resources, Science and Learning, which depict details of the boundary lines of each closure area. These m,asters will be updated as closure boundaries change throughout the course of the season and will be distributed to all parties on the Closure Notification List as closures change. Backcountry staff will be encouraged to have backcountry users consult the maps for familiarity with closure boundaries. These maps will also form the basis for field deployment of closure signs. The Wildlife Biologist is responsible for original map preparation and subsequent closure boundary updates.

Delegations of Authority

In the absence of Subdistrict Rangers, District Rangers, the Chief Ranger, the Wildlife Biologist, the Wildlife Biologist, the Director Center for Resources, Science, and Learning, the Assistant Superintendent, or the Superintendent, those individuals who have delegated authority to act on their behalf will make decisions regarding closures and will take actions accordingly.

I concur with the above recommendations on implementing temporary and emergency closures for wildlife related resource conditions:

_____ _____

Superintendent Date

Notification list

Persons and places to notify when a closure is put into effect

Upon notification the communication center will distribute the closure information to the following:

Public Information Officer
Backcountry Desk at Visitor Center
Half sheet notice is posted in headquarters at mailboxes
Superintendent's Secretary
Wildlife Biologist
East District L.E. Rangers
West District L.E. Rangers
Interpretation staff conducting programs in or near affected areas
Morning report (via radio at 10am, reports are also distributed)
Shuttle bus dispatcher
ARAMARK transportation (tundra wildlife tours)
Kantishna businesses (if appropriate)

A closure update sheet will be distributed as closures change. This sheet should be posted and accessible to all employees.

CASE INCIDENT REPORT SF-344
FORMAT FOR CLOSURE & OPENING RECOMMENDATION

FORM NO. 10-344
(Rev. 3-73)

U.S. DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE
SUPPLEMENTARY CASE/INCIDENT RECORD

ORGANIZATION (PARK) NAME	CASE/INCIDENT NUMBER
Denali National Park and Preserve	030019
LOCATION OF INCIDENT Highway Pass	DATE OF INCIDENT 6/12/03
NATURE OF INCIDENT Jaeger Nest	
COMPLAINANT'S NAME	COMPLAINANTS ADDRESS

RESULTS OF INVESTIGATION

EFFECTIVE DATE: 6/12/03

EFFECTIVE TIME: 08:30 HRS

CLOSURE NAME: Long-tailed Jaeger Nest

CLOSURE NUMBER: 012

JUSTIFICATION: This area includes an active Long-tailed Jaeger nest in a high visitor-use area. The nest is visible from the road and highly accessible. A Long-tailed Jaeger nest is more conspicuous than other nests such as Ptarmigan due to their active behavior around the nest. Ptarmigan and other species conceal their nests whereas Long-tailed Jaegers nest out in the open. Long-tailed Jaegers are a high profile species that photographers search out. Long-tailed Jaegers are relatively uncommon in Denali and unlike Ptarmigan are very sensitive to human disturbance. There is evidence to suggest that the more Long-tailed Jaegars and other ground nesting birds are disturbed the more likely they are to abandon their nests. Multiple visits to this nesting site leading to abandonment of the nest could cause exposure of the eggs to the elements and increased likelihood of predation (pers. comm. Carol McIntyre). The nest is on a south facing slope and long term exposure to the sun could be detrimental. There was an incident in the past with Professional Photographers in this same area when the NPS won a court case over intentional disturbance to wildlife (Long-tailed Jaeger chicks). This area will be closed to public use temporarily until the Long-tailed Jeager young fledge from the nest or earlier if the nest fails. Closing this area does not significantly alter public use patterns of the Park or have a significant negative impact on visitor use and experience. Less restrictive measures to protect this nest will not suffice due to lack of constant observation and contact by Park staff to visitors and professional photographers in this area. Signing the area will be the most effective way to protect the nest.

LOCATION: Mile 58.7 approximately 150 meters from the road on the North side.
N 63.47800° W150.14503°
Closing a minimum of 300 feet radius is designed to match the terrain and accessibility of the area.
POST SIGNS: Wildlife Management Technicians

NOTIFY COMM. CENTER: Wildlife Management Technicians

OTHER COMMENTS: Authority for temporary closures is found in Title 36, Code of Federal Regulations, Section 1.5. The area is posted with appropriate signs as prescribed in Title 36, CFR, Section 1.5.

SUBMITTED BY **(SIGNATURE AND DATE)**	**APPROVED BY (SIGNATURE AND** DATE)

FORM NO. 10-344
(Rev. 3-73)

U.S. DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE
SUPPLEMENTARY CASE/INCIDENT RECORD

ORGANIZATION (PARK) NAME	CASE/INCIDENT NUMBER
Denali National Park and Preserve	030019

LOCATION OF INCIDENT
South of Highway Pass, Unit 11 DATE OF INCIDENT 7/03/03

NATURE OF INCIDENT
Temporary (Emergency) Wildlife Closure OPENING

COMPLAINANT'S NAME	COMPLAINANTS ADDRESS

RESULTS OF INVESTIGATION

EFFECTIVE DATE: 7/07/03

EFFECTIVE TIME: 0800

CLOSURE NAME: Highway Pass bear kill

CLOSURE NUMBER: 011

JUSTIFICATION: The area was observed by Wildlife Management Technicians and it was determined that it was safe for visitors. The kill site mound was gone and the large dark colored bear that was on kill on 7/02/03 was observed approximately 1500 meters south of site grazing and resting.

REMOVE SIGNS: Wildlife Management Technicians

NOTIFY COMM. CENTER: Wildlife Management Technicians

OTHER COMMENTS: Authority for temporary closures is found in Title 36, Code of Federal Regulations, Section 1.5. The area is posted with appropriate signs as prescribed in Title 36, CFR, Section 1.5.

SUBMITTED BY (SIGNATURE AND DATE)	APPROVED BY (SIGNATURE AND DATE)

Wildlife Closure Spreadsheet

Closure Number	Date Closed	Closed By	Unit #	Reason Closed	Location Description	Date Opened	Opened By
1	6/7/2003	Dave Schirokauer		Historic Wolf denning area	Jenny Creek		
2	5/1/2003	Dave Schirokauer		Historic Wolf denning area	Teklanika River		
3	5/7/2003	Dave Schirokauer	4,5,7 ,32	Historic wolf denning areas	Savage Hogbacks, Sanctuary Ridge, East Fork, Toklat	5/22/2003	Dave Schirokauer
4	5/23/2003	Dave Schirokauer	8	gryfalcon nest	marmot rock		
5	5/23/2003	Dave Schirokauer	34	GOLDEN EAGLE NEST	Eilson bluffs N of park rd. mil 67.6 to 67.8		
6	5/23/2003	Dave Schirokauer	29	bear kill	unit 29 - 1.5 mile nw of Teklanika campground	5/25/2003	Eric Bindseil
7	5/27/2003	Dave Schirokauer	39	Wolf Den	Toklat Island		
8	6/8/2003	Eric Bindseil	15	Nesting loons	east end of wonder lake near boat launch		
9	6/7/2003	Dave Schirokauer	34	Gryfalcon Nest	Eielson bluffs		
10	6/7/2003	Dave Schirokauer	15	nesting terns	Southern end of Wonder Lake		

Appendix I. Training Requirements

Thorough training in aversive conditioning techniques, the use of firearms, immobilization agents, free-darting, and aerial capture is mandatory before employees are permitted to participate in the respective activity.

Firearms

The use of firearms for bear management purposes shall follow guidelines as listed in NPS-44, Resource Management Qualifications. The primary purpose for issuance of a weapon to Bear Management personnel is for protection of the visitor in case of animal attack, or for disposal of animals. Secondarily, the weapon is available for personal protection in case of animal attack, during management actions, and patrolling of areas closed due to bear problems. Unless otherwise stated in this plan, on lands within the boundaries of Denali National Park and Preserve, a bear will be killed only if it presents a critical and immediate threat to human safety and after all other means of deterrence have been exhausted.

Firearms training courses for natural resource management purposes include the following components:

Pistol Course - This course is required only if the employee will be using a pistol during the performance of his/her duties. The course is fired at a 12 inch diameter scoring ring. Any hit inside the 12 inch ring scores one point; any hit outside the 12 inch ring is scored as zero. A minimum score of 80% is required for qualification.

3 yards	offhand/standing	6 rounds	15 second time limit
7 yards	offhand/standing	6 rounds	20 second time limit
15 yards	offhand/standing	6 rounds	25 second time limit

Shotgun Course - This course is fired at a 12 inch diameter scoring ring. Any hit inside the ring scores as one point per hit; a hit outside the 12 inch ring is scored as zero. A minimum score of 80% is required for qualification.

7 yards	standing shoulder	buckshot*	2 rounds	6 second time limit
15 yards	standing shoulder	buckshot*	2 rounds	8 second time limit
15 yards	standing shoulder	slug	4 rounds	16 second time limit

* For shotgun familiarization purposes only. Buckshot is not used for any bear management activity.

Immobilization

Ground Based Dart Capture

The following minimum qualifications are required for employees immobilizing bears in a ground based free-darting situation:

1. Successful completion of a 24 hour wildlife immobilization class covering the following topics: drug pharmacology, wildlife reactions to drugs, human and wildlife safety, wildlife handling ethics, monitoring immobilized animals, loading of darts, dosage calculation, drug handling, and equipment familiarization.

2. Field experience participating in supervised captures/immobilization (amount of time to be determined by the overseeing supervisor based on the trainee's prior experience and aptitude).

3. Current CPR certification

4. Successful annual qualification with immobilization rifles. A minimum of 80% proficiency is required on a course specifically designed for capture weapons used within Denali that includes:

This course of fire is to shoot five 4-ml. darts from 10 and 15 yards at a 12 inch diameter scoring ring. Any hit inside the 12 inch ring scores as one point; any hit outside the 12 inch ring is scored as zero. A minimum score of 80% is required for qualification.

10 yards	offhand/standing	5 rounds	4cc dart
15 yards	offhand/standing	5 rounds	4cc dart

Aerial Capture

In addition to the qualifications mentioned above for ground based darting, employees involved in the aerial capture of animals must meet the following minimum qualifications:

1. 8 hours of aircraft safety training, OAS-B3 or equivalent (recurring every three years).

2. Current on-the-job capture experience.

3. 40 hours of Aerial Capture, Eradication, and Tagging of Animals (ACETA) operational and aircraft safety classroom training.

4. Firearms certification (recurring every year).

5. Gunners must complete an operational airborne instruction and check ride as part of the 40 hour ACETA course.

Appendix J. Criteria and Guidelines for Handling and Immobilizing Bears

Bears will be captured and handled only for management and research purposes. Valid causes for handling include marking potential problem bears, marking bears for identification by researchers, relocation, destruction, and acquisition of biological samples and measurements.

Fully trained staff (Appendix I) will direct all handling and immobilization operations. This is to help insure proper use of the equipment and drugs, safety for both the bear and its handlers, and provide uniformity in records and biological measurements. The Wildlife Biologist will insure that either formal or informal annual training sessions (Appendix I) are conducted to train Wildlife Branch staff in the correct use of culvert traps, drugs, and immobilization equipment. Staff will be trained to the highest standards on bear handling procedures, biological measurement and sample acquisition, and how to properly complete handling reports. This training will normally be coordinated by the Wildlife Biologist. Highly experienced staff members, specialists, or veterinarians trained and experienced in handling bears will conduct this training.

A licensed veterinarian will be retained for prescription and consultation on drugs, to review and provide advice on animal handling techniques, to provide training, and for consultation on veterinary problems. No tools or techniques that are not humane or cause unnecessary pain will be used to handle bears.

Capture/Immobilization Methods

1. Aerial Capture

Bear captures for research purposes occur primarily during May and September when bears are out of the den, leaves are off the shrubs to increase visibility, and temperatures are fairly cool. Bears may be captured at any time while out of the den for management purposes. Bears are located by intensive survey with a PA-18 Supercub or by locating previously radio-collared individuals. All capture efforts use a Hughes 500, Bell 206 Jet Ranger, or Robinson R-44 helicopter as a darting platform and to transport the processing crew, consisting of a gunner and 1 or 2 assistants. A PA-18 Supercub is used to direct the helicopter to the bear for capture, to monitor darted bears until drug induction, and to check on bears captured on previous days. Operations and aircraft specifications will be within OAS - ACETA guidelines (attached).

2. Ground Capture with Culvert Traps

In areas accessible by roads, the culvert trap is the principal device to capture bears. It will be set in the evening after visitor activity slows, and the door will be closed in the morning before 8:30 a.m. Adequate blocking will be used to insure that the trap is neither a safety hazard nor so unstable as to discourage a wary bear. Traps must be marked

"Danger" in red letters on both sides. An Emergency Closure (appendix H) will be implemented for the area around the trap.

Traps will be painted a light color to reflect heat. In hot weather, trapped bears will be moved to a cool, shaded site away from campgrounds or other public use areas; bears should be hosed down with water periodically during warm weather. In all weather, clean hay may be placed on trap floors to provide insulation from metal.

Trapped bears requiring immobilization will be drugged within the trap by jab stick or blow gun. A designated employee will be responsible for a trapped animal at all times until released. Normally, the person who sets a bear trap is responsible for the animal's safety until a certified bear handler is on scene. The handler is responsible until it is safe to transfer the responsibility to other personnel. That person is then responsible for the bear until it is released.

Bears will not be kept in traps longer than 24 hours unless extraordinary circumstances prevent proper disposition within that limit. The Wildlife Biologist will make this determination, provide instructions for sustained care of the bear, and advise the Superintendent of the bear's status.

When sows with cubs are trapped and the cubs remain outside the trap, or when cubs are trapped without mothers, every attempt will be made to reunite the mother with her cub(s) as soon as practical. If unsuccessful and the mother is not a problem bear, then she will be released where captured as soon as possible after tagging and gathering biological statistics. If the mother bear is a problem bear to be relocated and the cubs cannot be caught within 24 hours, then the Wildlife Biologist will make the decision whether: (1) the mother is released in another effort to capture the whole group; (2) the mother is held beyond 24 hours and the effort to capture the cubs is continued; or (3) the cubs are abandoned, particularly if old enough to wean.

3. Capturing a free ranging bear with a dart gun from the ground.

Drugs, administered by use of a drug-injecting dart fired by ground based personnel, is a very rarely used alternative. It is not considered safe for the staff involved or the bear and must be approved on a case by case basis by the Assistant Superintendent for Resources, Science, and Learning.

Use of Immobilizing Drugs

All bears are captured using Telazol (tiletamine and zolazepam; 250 mg/ml) delivered in projectile syringes fired from a syringe rifle. We attempt dosages of 7-10 mg/kg of grizzly bear body mass and 5-8 mg/kg of black bear body mass. Three to seven ml darts (dependent on species and sex of bear) with 1.9 cm (3/4 in) barbed needles fired with "Low" propellent charges ("brown wads") are used for spring captures. During spring captures the rump is the muscle mass of choice for injection. Longer, 3.8 cm (1.5 in) needles with 4-7 ml darts are used in fall for subadults of both sexes and adult females, respectively. Adult grizzly males

are not routinely captured during fall, but when necessary receive 2 consecutive injections totaling 12 ml of Telazol. Extensive fat deposits during fall require injection into a shoulder.

Once bears are immobilized, body temperatures are determined as soon as practical with a rectal thermometer and monitored continually. Bears with body temperatures higher than 40.6 ºC (105 ºF) are cooled with water and/or with snow packed in the groin, along the animal's belly, and on foot pads. Cooling continues until rectal temperatures are below the 40.6 °C threshold. Drugged bear will be monitored for respiratory difficulties, convulsions, eye reflex, cyanosis, evidence of premature recovery from the drug, and any other potential problems which, if undetected, could be hazardous for either the bear or its workers.

In the event an animal must be euthanized due to a capture related injury or for management purposes, the guideline established by the American Veterinary Medical Association (2000) will be followed.

Bears that are incompletely immobilized or that recover during handling are given additional 125 to 250 mg doses of Telazol to maintain appropriate anesthesia.

Immobilized bears are left in a safe location (e.g. away from open water or steep slopes) and allowed to recover from anesthesia undisturbed. All captured bears are located within 1 or 2 days of capture to determine that they have recovered from the immobilization and family groups are reunited.

Handling Immobilizing Agents

Scheduled and prescription drugs are obtained and may only be dispensed by the Park's Drug Practitioner. Drugs are stored in a safe. Drugs may be signed out to personnel with potential need for immobilizing bears and who have either attended the Parks' course in immobilization or received equivalent training and/or experience and are deemed competent by the Parks' Drug Practitioner. The Drug Practitioner will ensure that records are kept of drug inventory, use, and distribution to field areas. Each recipient of drugs will be responsible to see that records of drug use are sent to the Park's Drug Practitioner monthly. Unused (mixed but disposed of) and drugs with lost darts will be documented by the Drug Practitioner after each capture session. Drug accountability is the responsibility of the Park's Drug Practitioner who will maintain records on all drug use and distribution.

Tagging/Gathering Biological Statistics

Bears are radio-collared and fitted with plastic eartags. The small tissue sample removed from the ear during tagging will be retained for future genetic analysis. Radio-collars consist of hermetically sealed radio-transmitters attached to collars made of 5- (for VHF collars) or 6-cm-wide (for GPS collars) reinforced machine belting, and weigh 500-1,000 g (VHF) or 1,700 g (GPS). Transmitters are motion-sensitive, transmitting at 75-100

bpm when active and 45-60 bpm if motionless for 4 hours, to indicate mortality. Expected transmitting life of this configuration is 3 years at the active pulse rate.

Each bear is weighed and physical measurements are taken. Percent body fat is estimated using bioelectrical impedance analysis. Bears are examined to determine overall body condition and the presence of injuries. Their teeth are examined to determine the extent of wear and breakage and to estimate their age. A first premolar is extracted during a bear's first capture and sectioned for age determination. Breeding status is evaluated by teat and vulva condition and the presence of cubs. A 60 ml blood sample is drawn from the femoral artery using a 20-ga needle 2.54 cm in length for dietary, disease, and genetics analyses. Whenever possible, biological and drug reaction data will be collected on all bears handled using a standardized bear field data form, see Appendix G. Minimum biological data are sex, weight (estimated or measured), girth, total length, reproductive condition, presence of external parasites, pelage color, injuries, and estimated age.

Release/Relocation

Immobilized bears are left in a safe location (e.g. away from open water or steep slopes) and allowed to recover from anesthesia undisturbed. All bears captured are located within 1 or 2 days of capture to determine that they have recovered from the immobilization and family groups are reunited.

Trapped and drugged bears will be attended or held in culvert traps until they appear fully capable of defending themselves from other bears and otherwise functioning normally in the natural environment.

Non-problem bears will be released within 0.5 kilometer of where they were captured. Every effort will be made to avoid releasing bears in view of the general public, unless the release is part of an interpretive function approved by the Superintendent. Problem bear may on occasion also be released on site and aversively conditioned as part of an experimental aversive conditioning program.

Bear relocation will not be used as a long-term solution to human/bear problems. This is not considered effective or an ecologically sound bear management strategy.

References:

AVMA 2000, 2000 Report of the AVMA panel on euthanasia. Journal of the American Veterinary Medical Association, Vol. 218, No. 5.

Updated 9/2000

Bear Capture Kit Inventory

_ 8 dart tails
_ 8 plungers
_ 8 needles (short, medium, long)
_ 16 dart tubes (4/3cc, 4/4cc, 4/5cc, 4/7cc)
_ 1 bottle plunger lube
_ 1 film canister Vaseline
_ 1 film canister 4-10 cc internal charges
_ 1 film canister 1-3 cc internal charges
_ 1 film canister green charges (Low)
_ 1 film canister yellow charges (Medium)
_ 1 film canister brown charges (Very Low)
_ 1 Positioner
_ 3 Gas exchangers
_ 1 Dart cover or Cork
_ 2 Blood kits (Vacutainer, needles, heparinized & nonadditive tubes)
_ 4 tooth envelopes
_ 4 5 cc syringes
_ 4 10 cc syringes
_ 6 20 gauge needles
_ 6 10 gauge needles
_ 1 book of matches
_ 1 sharps container
_ 1 thermometer with extra battery
_ 1 tube eye ointment
_ 1 roll electrical tape
_ 1 pair needle nose pliers
_ 1 tooth elevator
_ 2 bottles distilled/sterile water
_ 1 film canister nitrofurizone or antibiotic ointment
_ 1 measuring tape
_ 4 pairs latex gloves
_ 1 tube of dessicant
_ Pens and Pencils
_ Permanent marker
_ Alcohol Swabs
_ 4 pairs of Ear Tags
_ Hole Punch
_ Tagging pliers
_ Break-away collar leather
_ Collar brackets and extra nuts
_ Nut driver
_ Knife
_ Small crescent wrench
_ 1 Mouth expander
_ 1 pair large calipers
_ Ziplocks and Trash Bags
_ Park Map
_ 1 Telazol dosage and safety card
_ 1 Measurement standards card
_ 4 Capture data forms

Other Equipment to Supplement Kit:

_ 1 Radio Collar and extra magnet
_ 1 Large Tarp
_ 1 Scale
_ 1 Dart Gun
_ 1 Pole syringe
_ 1 Gun cleaning rod

Measurement Standards

-Collar should be 1-1.5 cm larger than widest head circumference

Skull Length: tip of nose to superior nuchal line
Skull Width: Most distant points of zygomatic arch
Girth: Immediately behind the forelimbs, averaging max and min from inhale to exhale
Total Length: tip of nose to end of last tail vertebrae
Height at Shoulder: Articulation of wrist to distal end of scapula
Female Pectoral Nipples: width and height of both pectoral nipples (mm)
Head: Girth of widest point
Neck: Girth of neck directly behind skull
Fore foot width: width of pad
Fore foot length: from base of pad to top of toe pad
Total fore foot length: from base of pad to end of claw
Hind foot width: width of pad
Hind foot length: from base of pad to top of toe pad
Total hind foot length: from base of pad to end of claw
Tag Scars: N = no, L = left ear, R = right ear, B = both
Tooth: R = right upper first premolar, L = left u.f.p.
Lactating: Yes or No
Cub Age: C = Spring, Y = yearling, 2 = 2yrs, 3 = 3yrs
Body Condition: F = Fat, G = Good, I = Intermediate, P = Poor, E = Emaciated
Blood: Red or Purple

Telazol Specifics

-Mix 5ml sterile water with 3 500mg (1,500mg) bottles Telazol
-Results in 6 ml final drug: lasts at room temp for 4 days
-Concentration is 250 mg/ml

Dart Gun Set-up:
-external charge placed at 6:00
-Brown = very low range
-Green = low range
-Yellow = moderate range

Standard doses for bears:
Small 150-300 lbs. = 3 ml
Adult Female 200-300 lbs. = 5ml
Adult Male 400 lbs + = 7 ml
Spring cubs/small yearlings = ½ ml spring to 2 ml fall

Injection site:
Intramuscular = 6-8 minutes
Subcutaneous = 15-30 minutes
Fat = not good & decreases dosage

Telazol is a Central Nervous System immobilant:
-Cover eyes and use eye ointment
-Keep from facing the sun
-Position head downhill in case of vomiting
-Body Temp avg. 101°F
    106°-107°F is Dangerous!
    Add water to groin to lower temp
-Prevent Cubs from nursing on drugged mother, sternal recumbent placement
-Additional doses should be less than original dose
-Total drugs given should not double recommended dose

OAS-12 (3/02)

DEPARTMENT OF THE INTERIOR - OFFICE OF AIRCRAFT SERVICES

AIRCRAFT RENTAL AGREEMENT PROVISIONS: SUPPLEMENT NO. 4

SPECIAL USE – HELICOPTER

AERIAL CAPTURE, ERADICATION AND TAGGING OF ANIMALS

Definitions

ACETA (Aerial Capture, Eradication and Tagging of Animals) As used in this supplement, ACETA is defined as operations conducted from a helicopter, i.e.: Eradication (elimination by use of a firearm), marking (use of paint ball gun or similar device), Tagging (Hand held net gun, Airframe mounted net gun, or darting).

B8.4.1 Certification.

The aircraft and the pilot must be carded for the appropriate operations under the Department of Interior ACETA Aerial Capture, Eradication, and Tagging of Animals) Handbook (351 DM 2 - 351 DM 3).

B8.4.2 Flight Operations.

B8.4.2.1 A restriction while carrying weapons. While conducting ACETA operations, the designated gunner may carry aboard the aircraft and operate appropriate weapon(s) for the accomplishment of the mission. The weapon shall not be loaded (in the chamber) or cocked unless the muzzle is outside and pointed away from the aircraft.

B8.4.2.2 VFR Minimum Altitudes. While conducting ACETA operations over sparsely populated areas, the aircraft may be operated below 500 feet above the surface in compliance with FAR 91.119.

B8.4.3 Personnel Requirements.

B8.4.3.1 Pilot Requirements. Pilots shall have logged the following hours as PIC in addition to the general requirements of the ARA.

B8.4.3.1.1 Helicopter.

B8.4.3.1.1.1 100 hours in class size (small, medium, and large as applicable).

B8.4.3.1.1.2 200 hours, including 10 hours in the last 6 months, low-level flying over hazardous/mountainous terrain and operating from unimproved heli-spots at high-density altitudes. B8.4.3.1.1.3 50 hours experience as pilot for predator control hunting operations, or 200 hours experience in agriculture application type flying.

B8.4.3.1.1.4 Pilot Endorsements. The pilot will be endorsed for the specific mission requested i.e.: Handheld Net Gun, Airframe mounted Net Gun, Eradication (shotgun, rifle, etc:), Darting/tagging (dart gun, paint ball).

B8.4.3.2 All ACETA pilots must demonstrate the following:

B8.4.3.2.1 Positive flying safety attitudes and habits.

B8.4.3.2.2 Positive attitude regarding requirements and procedures for aerial hunting of predator animals.

B8.4.3.2.3 Emotional stability under the stress of low-level aircraft operations required for aerial hunting.

B8.4.3.2.4 Positive personality characteristics required to work and communicate effectively with field personnel and cooperating agencies.

B8.4.3.2.5 Knowledge of and/or willingness to learn predator habits and how to effectively and efficiently hunt them.

B8.4.3.2.6 Ability to identify and safely maintain effective airborne contact with the target animal.

B8.4.3.2.7 Willingness to work unusual hours and lodge at remote field locations.

B8.4.4 Personnel Protective Equipment (PPE).

B8.4.4.1 This is a special use activity and PPE is required. Aviator's flight helmet, consisting of a one-piece hard shell made of polycarbonate, Kevlar, carbon fiber, or fiberglass, must cover the top, sides (including the temple area and to below the ears), and the rear of the head. The helmet shall be equipped with a chinstrap and shall be appropriately adjusted for proper fit. Flight helmets for helicopter usage must conform to a national certifying agency standard, such as DOT, Snell-95, SFI, or an appropriate military standard, and be compatible with required avionics (see section B8.4.6.7). "Shorty" (David Clark style) helmets are not approved. Flight helmets currently meeting this requirement are the SPH-3, SPH-4, SPH-5, SPH- 4B, SPH-8, HGU-56 and HGU-84. Helmets designed for use in fixed wing aircraft do not provide adequate protection for helicopter occupants and are not approved for helicopter use.

B8.4.4.2 Pilots shall wear long-sleeved shirt and trousers (or long-sleeved flight suit) made of fire-resistant polyamide or aramid material or equal. Pilots shall wear boots made of all-leather uppers that come above the ankles and leather, polyamide or aramid gloves. The shirt, trousers, boots, and gloves shall overlap to prevent exposure to flash burns.

B8.4.5 Aircraft Requirements.

B8.4.5.1 A first aid kit containing items specified in Attachment 4 shall be furnished by the Vendor and carried aboard the aircraft on all flights.

B8.4.5.2 A survival kit containing items specified in Attachment 4 shall be furnished by the Vendor and carried aboard the aircraft on all flights.

B8.4.5.3 Shoulder harness/lap belts.

B8.4.5.3.1 Front seat occupants. Helicopters will have double-strap shoulder harness with self-locking inertia or locking reel and lap belt for pilot and gunner. Shoulder straps and lap belts will fasten with metal-to-metal, single point, quick-release mechanism. A rotary-type buckle, similar to Pacific Scientific "Saf-T-Matic", will be required on helicopters not equipped with an approved shooting door or window.

B8.4.5.3.2 Rear seat occupants with door on. Lap belts will fasten with metal-to-metal mechanism.

B8.4.5.3.3 Rear seat occupants without door. The gunner shall wear an OAS approved adjustable full-body harness equipped with a quick release system. A safety strap will be attached to the harness and the aircraft, at a location and in a manner approved by OAS. The OAS Division of Technical Services will establish requirements for specific aircraft types.

B8.4.5.3.4 If a shooting door is not installed, the aircraft shall be capable of flight with door(s) removed for shooting. (Not applicable for net guns attached to the aircraft exterior.)

B8.4.5.4 Tundra Boards or Snow Pads. (Mandatory in Alaska when the helicopter is not equipped with standard or emergency flotation gear or as noted in the aircraft order.)

B8.4.5.5 Dual controls are required for pilot performance evaluations. Dual controls shall be removed prior to use under this agreement.

B8.4.5.6 The following optional equipment and accessories are recommended for helicopters:

B8.4.5.6.1 High-skid landing gear.

B8.4.5.6.2 Personnel access step. Helicopters equipped with extended gear shall have a personnel access step to assure safe entrance and exit from each door of the helicopter. A section of external cargo rack may be utilized as a step by providing a clear space covered with nonskid material.

B8.4.5.6.3 Shooting door or window.

B8.4.5.6.4 Cabin heater and defogger.

B8.4.6 Avionics Requirements.

B8.4.6.1 General. The following systems shall be furnished, installed and maintained by the Vendor in accordance with the manufacturer's specifications and the installation and maintenance standards of Section B8.4.6.10.

B8.4.6.2 Communications systems.

B8.4.6.2.1 One automatic portable emergency locator (ELT/AP) or an automatic fixed/portable emergency locator (ELT AF/AP) meeting TSO-C91 or TSO-C91A shall be installed in the helicopter cabin in a conspicuously marked location that is easily accessible, and readily removable in the event of an accident. B8.4.6.2.2 An uni-directional ELT shall be installed with the "arrow" aimed 45 degrees downward from the normal forward "direction-of-flight" of the helicopter. If the primary antenna is a fixed type, a portable antenna shall be attached to the ELT unit.

B8.4.6.2.3 In lieu of the ELT requirement above, an automatic fixed emergency locator transmitter (ELT AF) meeting TSO-C91A or an ELT that requires tools to remove from the aircraft may be acceptable when a handheld portable ELT/EPIRB is furnished. The ELT/EPIRB shall be compact and easily carried by the PIC. A handheld ELT/EPIRB such as Emergency Beacon Corporation's model EBC-102 with telescoping antenna or Emergency Locator Products Corporation's model ELP-1000 meets this requirement.

B8.4.6.3 One VHF-AM aeronautical transceiver, operating in the 118.000 to 135.975 MHz band, with a minimum of 720 channels, in no greater than 25 KHz increments, and a minimum of 5 watts carrier output power, shall be installed in the aircraft.
B8.4.6.4 Provisions for Auxiliary VHF-FM (AUX-FM) Portable Radio.

B8.4.6.4.1 The vendor shall provide the necessary interface for installing and properly operating an Auxiliary VHF-FM Portable Radio through the aircraft's Audio Control Systems. The interface shall consist of the appropriate wiring from the Audio Control Systems which is terminated in a MS 3112E-12-10S type connector, mounted in a location convenient to the observer, and utilizing the following contact assignments:

Contact Designation	Interface Functions
A	Airframe Ground
B	Push-to-talk (isolated contact closure)
C	Push-to-talk (isolated contact closure)
D	Receiver audio low
E	Receiver audio high (Variable from 10 mW to 500mW, 8 ohms to 75 ohms)
F	Transmitter Microphone Low
G	Transmitter Microphone High
H	+14 VDC from aircraft avionics buss, 5 amp Type A circuit breaker. For 14V aircraft only!
J	+24 VDC from aircraft avionics buss, 5 amp Type A circuit breaker. For 28V aircraft only!
K	Spare contact

B8.4.6.4.2 One weatherproof external broadband antenna covering the 150-174 MHz band, with associated RG-58A/U coaxial cable and connector, terminated in a bulkhead mounted female BNC connector convenient to the observer.

B8.4.6.4.3 Radio mounting facilities that comply with AC 43.13-2A, Chapters 1 and 2, shall be provided for the auxiliary radio for installation in the cockpit, with controls convenient to the pilot and observer. The auxiliary radio connector and antenna connector shall be so located that an 18-inch interconnecting cable may be utilized by the radio.

B8.4.6.4.4 The selector panel shall supply positive polarity microphone excitation voltage, from the aircraft DC power system through a suitable resistor network, to the aircraft microphone. A blocking capacitor shall be provided in the selector panel to prevent the portable microphone excitation voltage from entering the system.

> NOTE: Vendor-furnished FM radios capable of communicating with the Government portables will meet this requirement.

B8.4.6.5 Navigational systems. No requirements.

B8.4.6.6 Audio Control System.

B8.4.6.6.1 One audio control system shall be installed for the pilot and spotter/gunner, which provides control, selection and operation of multiple radio transceivers. Separate audio system controls shall be provided for the pilot to select specific receiver audio outputs and transmitter microphone/PTT inputs of multiple radios. An intercom system shall also be provided for the pilot and spotter/gunner position. Audio level controls shall be provided for the pilot and observer to adjust audio outputs to their respective earphones.

B8.4.6.6.2 Transmitter selection and operation. Whenever a transmitter (or PA system, when installed) is selected, the companion receiver audio shall automatically be selected for the corresponding earphone. Transmitter sidetone audio shall be provided for the user as well as at the other position for cross monitoring.

B8.4.6.6.3 Receiver Audio Selection and Operation. Selector switches shall be provided for the pilot earphone to permit selecting receiver audio from any one or combination of all receivers. The adjustable audio output shall be capable of 100 mW (600 ohms) with less than 10 percent distortion.

B8.4.6.6.4 Location and Marking. The respective controls of each audio control system shall be located conveniently for the pilot. Labeling and marking of controls must be clear, understandable, and permanent.

B8.4.6.7 Earphones and Microphones.

B8.4.6.7.1 (Helicopter) The system shall be designed for operation with 600 ohm earphones and 150 ohm carbonequivalent, noise-canceling boom type microphones (Gentex electret type Model 5060-2, military dynamic type M-87/AIC with CE-100 TR preamplifier, or equivalent) with U-75/U type connector plug. The only exception to this is the pilot's position, which may be a low impedance (dynamic) configuration.

B8.4.6.7.2 All earphone/microphone jacks in the aircraft (except the pilot’s) shall be U-92A/U (single/female) type, which will accept U-174/U type plugs.

B8.4.6.8 Push-to-Talk (PTT) Operation. Separate PTT switches shall be provided for radio transmitter operation and intercom operation at the pilot's position. The pilot's switches shall be located on the stick or cyclic control, as applicable. The spotter/gunner's interphone switch shall be located on the cord to the earphone/microphone connector.

B8.4.6.9 Intercom System. An intercom system shall be provided to serve the pilot and spotter/gunner. Intercom audio shall mix with, but not mute, selected receiver audio (Override Type). The intercom shall provide switchable "hot mike" and "push-to-talk" capability for the pilot and the spotter/gunner. An intercom audio level control shall be provided for adjusting the individual earphone audio to a comfortable listening level. Microphone operation on the intercom system shall be via PTT switches.

B8.4.6.9.1 Sidetone audio shall be provided to the earphone connector associated with the microphone in operation.

B8.4.6.9.2 The audio output shall be capable of 100 mW (600 ohms) with less than 10 percent distortion.

B8.4.6.10 Avionics Installation and Maintenance Standards.

B8.4.6.10.1 All avionics systems used in or on the aircraft for this contract and their installation and maintenance shall comply with all manufacturers' specifications and applicable Federal Aviation Regulations contained within 14 CFR regardless of any exclusion for public aircraft allowed in 14 CFR.

B8.4.6.10.2 Strict adherence to the recommendations in FAA AC 43.13-1A Chapter 11, "Electrical Systems", and Chapter 15, "Radio and Electronic Systems," as well as AC 43.13-2A Chapter 1, "Structural Data", Chapter 2, "Radio Installation," and Chapter 3,"Antenna Installation," is required. All avionics systems requiring an antenna shall be installed with a properly matched aircraft-certified, broadband antenna unless otherwise specified.

B8.4.6.10.3 All avionics systems requiring an antenna shall be installed with a properly matched, aircraft-certified antenna unless otherwise specified. Antennas shall be polarized as required by the avionics system, and have a VSWR less than 2.5 to 1.

B8.4.6.10.4 Avionics equipment mounting location and installation shall not interfere with passenger safety, space, and comfort. Avionics equipment will not be mounted under seats designed for deformation during energy attenuation. In all instances, the designated are as for collapse shall be protected.

B8.4.6.10.5 Although the aircraft to be provided may not be certified for IFR flight, the aircraft's static pressure system, altimeter instrument system, and automatic pressure altitude reporting system shall be maintained in accordance with the IFR requirements of 14 CFR 91.411 and inspected and tested every 24 calendar months as specified by 14 CFR Part 43, appendices E and F.

B8.4.7 Maintenance Requirements.

B8.4.7.1 Airworthiness Directives (ADs) & Manufacturer's Mandatory Service Bulletins (MMSBs). All applicable FAA ADs and required MMSBs shall be complied with prior to the performance of this contract. A list of FAA ADs and required MMSBs on the make and model of aircraft offered shall be made available. The list will be similar to that in Advisory Circular AC 43-9B. Signature of persons verifying accuracy of the list is required. All ADs and required MMSBs published during the contract shall be complied with.

B8.4.7.2 Time Between Overhaul (TBO) And Life Limited Parts.

B8.4.7.2.1 All components, including engines, shall be replaced upon reaching the factory recommended TBO or FAA-approved extension. Life limited parts shall be replaced at the specified time in service hours or cycles.

B8.4.7.2.2 Aircraft operated with components or accessories on approved TBO extension programs are acceptable provided, (1) the Vendor is the holder of the approved extension

authorization (not the owner if the aircraft is leased), and (2) the Vendor operates in accordance with the extension authorization.

B8.4.7.2.3 The Vendor shall supply, at the time of the initial agency inspection, a list of all items installed on the aircraft that are required to be overhauled or replaced on a specified time basis. This list shall include the components name, part number, serial number, total time, service life (or inspection/overhaul time interval), and time and date when component was overhauled, replaced, or inspected.

ATTACHMENT 4
FIRST AID & SURVIVAL KITS

These are minimum required items for Special Use Activities in the United States and U.S. Possessions. Additional survival kit items are required for flight activities conducted in Canada and Alaska.

Minimum First Aid Kit Items

Each kit must be in a dust-proof and moisture-proof metal or heavy plastic container. The kit must be readily accessible to the pilot and passengers.
Passenger Seats Passenger Seats
Item 0-9 10-50
Adhesive bandage strips, (3"long) 8 16
Antiseptic or alcohol wipes (pkts) 10 20
Bandage compresses, 4" 2 4
Triangular bandage, 40" (sling) 2 4
Roller bandage, 4"x 5 yds (gauze) 2 4
Adhesive tape, 1"x 5 yds (std roll) 1 2
Bandage scissors 1 1
Body Fluids Barrier kit: 1 1
2 - pair latex gloves
1 - face shield
1 - mouth-to-mouth barrier
1 – protective gown
2 – antiseptic towelettes
1 – biohazard disposable bag
NOTE: Splints are recommended if space permits.

Minimum Aircraft Survival Kit Items
Knife
Signal mirror
Signal flares (six each)
Matches (two small boxes in waterproof containers)
Space blanket (one per occupant)
Sleeping bag

Water (one quart per occupant [not required when operating over areas with adequate drinking water])
Food (two days emergency rations per occupant)
Candles
Water purification tablets
Collapsible water bag
Whistle
Magnesium fire starter
Nylon rope or parachute cord (50 feet)

For travel over rain forest areas, the following additional requirements:
Heavy plastic sheeting or waterproof tarps (2 each – 8' X 10")
Machete (2 each)
Flares carried shall be capable of penetrating above a forest canopy of 60'

Updated 9/00

Appendix K. Bear Placement Protocols

The Zoo Clearing House is the place to begin networking to determine if there is a facility looking for a bear. This responsibility is shared among zoos, so it is a good idea to call a large zoo or the National Zoological Society in Washington DC and inquire about the current location of the clearing house. In 1993 it was based at the Woodland Park Zoo in Seattle. Lee Warde, 1993 Zoo Clearing House Coordinator (206) 684-4832, facilitated communications with Robert Evans at the San Antonio Zoo (210) 734-7183 and Nora Fletchell at Michigan's John Ball Zoo (616) 776-2591. Nora Fletchell has requested information on any future problem bears. They are developing a North American bear exhibit to replace their aging Asiatic Black Bears.

Other good contacts include Phil Koehl who handles zoo and institution placements for the Alaska Department of Fish and Game (ADFG) 465-6198 and Harry Reynolds, Wildlife Biologist for ADFG 459-7238. Bruce Dale at ADFG's Fairbanks office 459-7235 could also be helpful.

Dr. Charlie Robbins at Washington State University sometimes needs bears for metabolic research. He is particularly interested in cubs or small yearlings. He can be reached at (509) 335-1119.

If a bear is going to be destroyed, research needs for tissue samples should be queried. Joe Cook at the University of Alaska, Fairbanks museum (474-6947) was extremely interested in muscle, liver, kidney, and heart samples for genetics work. He was also hoping to acquire the pelt and skeleton. Randy Zarnke, ADFG pathologist (456-5156), is researching Trichinosis and was interested in 75% of the tongue and 4 or 5 ml of serum. Chris Servheen, The Grizzly Bear Recovery Coordinator, in Missoula Montana, is interested in dried gall bladders.

Before destroying a bear, technicians should consult with ADF&G about the paperwork for a Defense of Life and Property case. Instructions and diagrams for ADF&G recommended bear skinning techniques are as follows:

Appendix L. Eielson Visitor Center Bear Protocol

The following guidelines will maintain a safety margin while providing visitors a bear viewing opportunity.

1. Visitor safety takes priority over all other activities. When a bear approaches the EVC, alert staff members that a bear is in the area. Available staff members including other naturalists on duty, ANHA employees, B&U or R&T workers, and Visitor Transportation System (VTS) dispatchers, should be used to monitor and control the situation. If a B&U employee is on site, they should be stationed in the Observation Tower. Available hand-held radios should be issued to staff members monitoring the bear's location and handling crowd control. Use a local channel for communication.

    A. Warn all visitors to collect food and be ready to move onto buses or inside the center, if necessary.

    B. The VTS dispatcher should alert arriving and departing bus drivers that loading and unloading procedure may be modified. If necessary, visitors may be asked to stay on their buses or in the visitor center until further notice. When it is determined that the bear's location will not endanger bus passengers, they may be loaded and unloaded at the EVC front door. Drivers should instruct their passengers to WALK to and from the buses.

    C. Remove any unattended packs on the porch or at the picnic tables; move them inside the building.

2. If the bear approaches the parking lot, move all visitors inside or behind the locked gate on the observation deck. Use a polite but firm voice to move people slowly away from the bear. Watch for stragglers trying to get closer to the bear. Only use the megaphone and loud speaker when hikers are approaching the bear’s location unaware of the situation.

    When the bear moves to a safe distance, reopen the doors and gate. Prevent any visitors from following the bear.

3. Complete a BIMS form and submit it to the Wildlife Management Technicians.

Appendix M. Bear Handling Management Actions

Bear Management Actions
Denali National Park and Preserve
Updated 2002

Date	Location	# of Bears	Age/Sex	Management Action	Justification
7/1946	Camp Eielson	1 GB	No Data	Destroyed	No Data
9/1948	AK Railroad Mile 349	1 GB	No Data	Destroyed	The AKRR crew attempted to drive the bear off with dynamite. The dynamite's explosion injured the bear severely enough that it had to be destroyed.
8/8/1949	Toklat River to Mile 25	1 GB	No Data	Relocated	No Data
8/16/1949	Mile 83	1 GB	No Data	Destroyed	No Data
8/17/1949	Old Morino Cabin	1 BB	No Data	Destroyed	Shot by USGS Employees when the bear pushed on the side of the tent they were camped in.
9/1949	ToklatRi. To Teklanika Ri.	1 GB	No Data	Relocated	Problem bear at the Toklat Road Camp. (See human injury, 1949)
8/1951	Morino CG to East Fork	1 GB	Adult/?	Relocated	Bear disturbed Caches at the railroad depot.
9/12/1951	Savage CG	1 GB	Adult/M 650lbs	Destroyed	The bear broke into Savage river bridge construction crew's cookhouse.
7/31/1952	HQ Res. to Teklanika R.	1 BB	No Data	Relocated	The bear ate bacon from a cooler.

8/1952	East Fork camp to Unknown	2 GB	Adult/F & cub	Relocated	The bear "caused trouble". The sow and one cub were moved. The fate of the second cub is unknown.
8/1952	East Fork Camp	2 GB	Adult/F & cub	Trapped & Released	The bear "caused trouble". The sow and one cub (3 cubs in total) were trapped and released at the same location to avoid disrupting the family. No further problems were reported.
6/4/1959	Savage CG	1 GB	?/2-3 yrs.	Destroyed	The bear was lame and remained near campgrounds. The Boy Scouts had been feeding the bear. Porcupine quills were found in one foot(Murie 1961).
6/1960	Eielson VC to Mile 80	1 GB	No Data	Relocated	The bear was attracted to the garbage in the Eielson Contractor's camp.
9/9/1960	Mile 5.6 to East Fork	1 GB	No Data	Relocated	The bear had remained in the hotel area for 2 days.
1960	Toklat CG to Mile 65	1 GB	No Data	Relocated	The bear had made visits to the Toklat contractor's camp.
8/1960	Mile 5 to Mile 40	1GB	?/2yrs	Relocated	The bears were attracted to the garbage pit.
7/1/1961	Hotel to Thorofare Pass	1 GB	No Data	Relocated	No Data
8/27/1961	Morino CG to Mile 60	1 GB	?/3-4 yrs.	Relocated	The bear disturbed employees and visitors.
9/4/1961	Hotel-High way Pass	1 GB	No Data	Relocated	No Data
9/24/1961	Hotel to Sable Pass	1 GB	No Data	Relocated	No Data
8/28/1963	5 Mile Dump	1 GB	Spring cub	Destroyed	The mother was found dead of unknown causes. One of 3 cubs

					remained in the area and was destroyed.
10/1963	HQ area	1 BB	No Data	Relocated-Destroyed	Residential area garbage cans were persistently disturbed and a vehicle was damaged. The bear was relocated once and then destroyed.
9/1965	HQ to Unknown	1 GB	Subadult	Relocated	Siding torn off a residence.
6/16/1968	Stony Hill	1 GB	No Data	Poached	Illegal kill within the park. Prosecuted.
8/24/1969	Mile 70	1 GB	3 yrs./M	Destroyed	No Data
6/25/1970	Eielson VC	1 GB	2 yrs./M	Destroyed	The bear was consistently too close to visitors and accepting handouts.
7/4/1970	Wonder Lake RS	1 GB	2 yrs./F	Destroyed	The bear was crippled (cause unknown)and lingering around the campground.
7/26/1971	Toklat CG	1 GB	3 yrs./M	Destroyed	After causing property damage 4 times the bear was relocated. The bear returned and was destroyed. A .30 caliber bullet was found in its leg.
9/2/1971	HQ Dump	1 GB	No Data	Destroyed	The bear was consistently feeding at the dump.
8/1/1972	Riley Cr. CG	1 GB	Subadult/?	Destroyed	Property damage and close contact with visitors for 2 days.
8/20/1973	Wonder Lake CG	1 GB	20-25yrs./M	Destroyed	The Bear was persistent in developed areas and caused property damage. See human injury, 1973.
9/10/1973	HQ Dump	1 GB	Adult/?	Poached	A freshly skinned carcass was found near tire tracks.

6/21/1974	Eielson VC to Lacuna Glacier	1 GB	Adult/F	Relocated – Destroyed	The Bear was frequenting roadside areas from Stony Cr. To Eielson VC. She returned 2 weeks later. She was destroyed 2 years later.
6/24/1975	Riley Cr. CG to Mile 72	1 GB	Spring cub	Relocated	No Sow was observed while this "thin and unenergetic" cub, frequented the campground.
6/14/1976	Stony Hill	1 GB	Adult/F	Destroyed	Frequented Eielson to Stony area since 1972. The sow neither damaged property nor sought handouts or garbage. Lack of fear and proximity to people were the problem. See 6/21/1974.
8/30/1976	HQ Dump	1 GB	Adult/F	Accidental Death	The Sow (3 cubs) died instantly after running into a fence. A patrol ranger had frightened the bear with a siren.
9/1/1976	HQ Dump to Alaskaland Zoo	2 GB	Yearlings / M&F	Donated	Without maternal guidance the cubs were expected to die or habituate to developed areas.
9/3/1976	HW Dump to Mile 56	1 GB	Yearling/ F	Relocated	After the Sow's death an unsuccessful attempt was made to unite this cub with another sow and yearling cub.

6/7/1977	Riley Cr. CG to Post Lake, 40 Miles S of Farewell Lake.	2 GB	2.5 yrs./2M	Relocated	The two 2.5 year old cubs and sow had been frequenting C-Camp, HQ, and Riley Cr. CG areas, disturbing garbage cans and approaching buildings. They killed a moose calf near the C-Camp road.
8/14/1977	Little stony Cr. To Lake east of Foraker River, SE of VM Straight	1 GB	Subadult/ F	Relocated	The bear was continually charging hikers and once touched a female hiker. The bear was reported on 9/20/1976 in the Toklat area. No further problems from this bear were reported.
8/4/1978	Eielson VC to Tattler Cr.	1 GB	1.5-2.5yrs./M	Relocated	This small bear was frequenting the EVC area. Although it was not aggressive it commonly approached people. It remained in the Igloo Canyon area for the rest of the summer.
8/6/1978	Eielson bluffs to Park boundary on Swift Fork	1 GB	Adult/M	Relocated	The bear caused frequent property damage in the backcountry and VC. The bear was shot by a hunter, in 1979, W of the Swift Fork.
6/14/1979	Toklat Rd. Camp toBig Lake 37 km SSW of Lk Minchumina	1 GB	Adult/F	Relocated	Small bear followed employees, and approached buildings after being chased off. Possible damage to hikers gear up Toklat River.
7/3/1979	Bergh Lk.-Sprucefish Lk.	1 GB	Subadult/ M	Relocated	Damaged gear and got food from hikers on Stony Cr.

7/5/1979	Toklat RS-Carey Lk.	1 GB	Adult/F	Relocated	Property damage and lack of fear.
8/4/1979	Sanctuary CG-Mile 76 Gravel Pit	1 GB	Subadult/F	Relocated	Came through campground multiple times. Property damage and Lack of fear.
7/26/1980	Morino CG	1 GB	?/F	Relocated, Destroyed	The bear was tearing up packs and getting food. Relocated 52 km by helicopter but returned, and continued raids. Destroyed.
9/12/1982	Stampede strip	1 BB	No Data	Destroyed	Persistently approached cabin. Killed in defense of property.
6/5/1984	Tattler Cr.	1 GB	Adult/F	Radio Collared	Bear # 102 obtained food from back packers.
7/9/1984	Sable Pass	1 GB	Adult/F	Radio Collared	Bear #109 obtained food from Backpackers.
7/16/1984	McKinley Bar	1 BB	Adult/M	Radio Collared	Bear #103 was captured on McKinley Bar at a campsite after obtaining human food.
7/26/1984	Red Top Mine	1 BB	Adult/M	Destroyed	Bear #103 had been around camp several times and was trying to get on the roof of a cabin. Bill Tull shot the bear because he felt the camp residents were threatened. DLP.
8/1984	Stampede Mine	1 BB	Adult/M	Destroyed	The bear was making determined efforts to break into a cabin. Gordon Harrison was inside the cabin with his family. The bear did not respond to efforts to chase it away. DLP.

7/17/1986	Stampede Camp	1 BB	Adult/M	Destroyed	The bear had been very close to a tent. Wyane Howell shot the bear when it approached to within 5'.
8/26/1986	Ponds near MP 80	1 GB	Adult/F	Destroyed	Management bear #107 drown after being tranquilized to replace her radio collar. Accidental.
10/1/1987	Dan Ashbrook's Property	2 GB	Subadult/ F, No Data	Destroyed	Bears had obtained food at the Kantishna Roadhouse and broken into the Ashbrook's cache of winter food. Two bears were shot 15 feet from his doorway; one killed the other unknown.
6/20/88	Camp Denali	1 BB	3yrs./M	Relocated	Management bear #133 was relocated to Castle Rocks after obtaining garbage at the Kantishna Roadhouse. The bear returned 4 days later but left the area on his own.

9/14/1988	Kantishna	1 GB	4yrs./M	Relocated, Died	Bear #115 was collared in 1987 after obtaining human food near Toklat RC. In fall of 1988 he obtained human food at the Kantishna roadhouse. He died in a relocation attempt. See Grizzly Cub by R. MacIntyre.
9/1990	Kantishna	1 GB	No Data	Destroyed	Grizzly had been frequenting the Kantishna Roadhouse obtained garbage, and was aggressive towards people. The bear disappeared, likely killed by Dan Ashbrook as reported by another Kantishna resident. CI-900324. High probability of an illegal kill.
6/23/1991	Denali Mountain Lodge	1 BB	6yrs/M	Destroyed	Management bear #133 was shot while obtaining food from an employees wall tent. DLP.
4/1992	Tokosha Mtns. South District	1 GB	23yrs./F	Poached	Skinned carcass with gall bladder removed found inside Park boundary by South Dist. Rangers. Case was successfully prosecuted.
6/15/1992	Red Top Rd.	1 GB	Adult/F	Destroyed	Michael and Robert Mark Anthony shot and killed a bear believed to have damaged their cabin. Necropsy results suggested the wrong bear was killed. DLP.

8/28/1992	Hornet Cr. Squatters Camp, 1 mi. N of Park boundary	1 BB	No Data	Destroyed?	Bear had been raiding campsites for a week before it was shot with a handgun. The bear was hit and fled into the woods.
11/11/1992	Slippery Cr.	1 GB	18yrs./M	Destroyed	Mickie Collins killed a research bear that was threatening her. DLP
6/23/1993	Cantwell	1 GB	4yrs./M	Destroyed	Management bear #137 (collared May 1997) was shot in a residential area. State Troopers stated it was not a NLP. Charges filed.
9/1993	Kantishna	1 GB	4-5yrs./M	Relocated	Management bear #744 first obtained human food in June. He returned to Kantishna after 2 relocation attempts and continued to be attracted to developed areas. The bear was relocated to the Grizzly Discovery Center in W. Yellowstone Montana.
1996	Highway Pass	1 GB	4-5yrs./F	Radio Collared, Collar Removed	Bear obtained backpacker's food. It was radio collared and monitored. Radio collar was removed on 9/??/97.
1996	West Fork Yentna Ri.	1 BB	?/M	Destroyed	Shot and killed by Denali Rangers while bear was destroying patrol camp. DLP.

1996	Wonder Lake	1 BB	2-3yrs. /M	Radio Collared, Collar Removed	Bear obtained improperly stored backpacker food. It was radio collared and monitored. Radio fell off and was recovered on 9/??/97.
1998	McKinley Gold Camp	1 BB	?/M	Radio Collared	The bear was trapped following reports of a bear obtaining food and damaging property at the Gold Camp. The bear was radio collared and aversively conditioned.
8/4/1998	Teklanika River.	4 GB	1 Adult/F, 3 Subadult/ M	Radio Collared	Bears obtained food on two occasions by entering backcountry camps. Closely approached people at road and in backcountry.
9/1/1999	East side of Broad Pass	1 GB	?	Subsistence Harvest	A subsistence hunter legally took a Grizzly Bear.
9/11/2000	Camp Denali	1 BB	Adult M	Radio Collared Relocated	Management bear #2001 had obtained garbage at Camp Denali and was rewarded with food out of refrigerator at North Face Lodge. The bear was captured, radio collared and relocated by helicopter 25 miles west of Kantishna. The bear was aversively conditioned at release site.

5/31/2001	Teklanika River	1 GB	adult/F	collar Removed	Management bear#9805 was captured on the Teklanika river, east of Cathedral mtn. Her Collar was removed as Monitoring of her Activity is not currently a critical management Issue.
9/10/2002	Kantishna Roadhouse	1 BB	8yr/M	Destroyed DLP	Management bear #9801 Had been causing Problems in Kantishna Starting in June of this Year. On 9/7 it broke Into a freezer at the Roadhouse and obtained Human food. On 9/9 it Broke into the Roadhouse Garbage shed and on 9/10 It entered the kitchen. It was shot and killed by a Roadhouse employee
9/2002	Kantishna hills	1 GB	?	Subsistence Harvest	A subsistence hunter legally took a Grizzly Bear near Glen Creek in The Kantishna hills.

Appendix N. Chronology of Bear Inflicted Human Injuries in Denali National Park and Preserve

Updated 2002

Date: 7/12/1949
Number of Persons Injured: 1
Number of Bears Involved: 3 Grizzly Bears
Location: Ewe Cr.
Name of Injured: Jack Reed
Age of Injured: 19-25
Sex of Injured: Male
Nature of Injury: Puncture wounds on lower back.

Narrative: Reed, a USGS crew member, surprised 3 bears, described as 2 adults and a cub," on a tundra slope. One bear chased him downhill until Reed leaped off a 20-foot cliff, just as the bear swatted him in the back. The bear came to the foot of the cliff and chased Reed farther, but eventually gave up and ran away. Also see Murie, A. 1961. A Naturalist in Alaska, p. 75.

Date: 7/1949
Number of Persons Injured: 1
Number of Bears Involved: 1 Grizzly Bear
Location: Mile 30
Name of Injured: No Data
Age of Injured: 40-60
Sex of Injured: Male
Nature of Injury: Punctures, lacerations on one arm.

Narrative: Two Alaska Road Commission employees were relocating a live-trapped grizzly bear from Toklat to Teklanika. Upon raising the trap door to release the bear, it refused to leave. One of the employees got out of the cab and walked around the front of the truck. Just then the bear exited the trap, ran around the front of the trap, caught the employee and bit and mauled one of his arms. The injuries resulted in the loss of use in that arm.

Date: 8/4/1961
Number of Persons Injured: 1
Number of Bears Involved: 1? Grizzly Bear
Location: E. side of Igloo Mountain
Name of Injured: Napier Shelton
Age of Injured: No Data
Sex of Injured: Male

Nature of Injury: Punctures, lacerations on left foot and thigh.

Narrative: Shelton was increment boring a treeline spruce when he heard a loud "woof" and discovered a grizzly bear coming towards him. Shelton rapidly climbed the tree, which was leaning sharply downhill, but the bear climbed up after him and bit his left foot. The bear climbed the tree a second time and bit Shelton's right thigh. The bear then retreated slowly. The increment borer that Shelton was using may have been making squeaking sounds that attracted the bear. Dr. A. Murie had observed a sow with 2 cubs in the same area earlier in the day.

Date: 8/8/1967
Number of Persons Injured: 1
Number of Bears Involved: 3 Grizzly Bears
Location: 1 mile East of Road at MP 56
Name of Injured: James Magowan
Age of Injured: No Data
Sex of Injured: Male
Nature of Injury: Punctures, lacerations of head, neck, arm, shoulder, thorax, legs, back, buttocks.

Narrative: Magowan, the seasonal Toklat ranger, received a report of a bear chasing a vehicle just west of the Toklat campground. He drove to the area with his wife, daughter, and 2 visitors, in Magowan's personal vehicle. He took no firearm. He observed 3 bears about 1 mile from the road at mile 56 and began hiking towards them with a borrowed camera and 200mm lens, in the company of his wife and daughter. When 200-400 yards from the sow with cubs, the sow sensed his presence and began circling him. From 200 yards she charged and mauled him severely.

Date: 7/21/1972
Number of Persons Injured: 1
Number of Bears Involved: 3 Grizzly Bears
Location: East Side of Divide Mountain, 1.5 miles South of Park road.
Name of Injured: Chris Cauble
Age of Injured: 22
Sex of Injured: Male
Nature of Injury: Punctures, lacerations on right leg, arms, back, and head.

Narrative: Cauble was hiking along the gravel bar of the Toklat River and observed a single bear on a hillside 0.75 mi. in front of him. He continued towards the bear and walked up the hillside, aiming for a route above the point where the bear had been, attempting to detour around it. At a point where he thought he was safe from the bear , but might be able to see it, he stopped and took off his pack. He soon saw the bear, and then 2

bears about 100 yards away. A third bear, the sow, appeared and charged from about 120 yards away. She knocked Cauble into some willows and mauled him briefly.

Date: 7/23/1973
Number of Persons Injured: 2
Number of Bears Involved: 3 Grizzly Bears
Location: Headwaters of Big Creek
Name of Injured: Mark Carey, Roger Pearson
Age of Injured: 24, 26
Sex of Injured: Both Male
Nature of Injury: Mark Carey suffered lacerations on left thorax, Roger Pearson suffered abrasions on his right shoulder, contusion, left eye.

Narrative: Carey and Pearson were camped without a tent. At 11:45 pm a sow with 2 cubs appeared and made 2 bluff charges, then approached to the edge of their ground cloth. The bear jumped over Pearson and attacked Carey, who was standing up in his sleeping bag, trying to get out. Carey fell to the ground and played dead. Pearson was then attacked, but he too played dead and the bear soon left.

Date: 8/19/1973
Number of Persons Injured: 1
Number of Bears Involved: 1 Grizzly Bear
Location: Wonder Lake
Name of Injured: John Osborn
Age of Injured: 21
Sex of Injured: Male
Nature of Injury: Lacerations on arms and hand.

Narrative: Osborn was ironing clothes in the Wonder Lake Ranger Station when he heard a noise on the front porch he believed was made by Bill Reed. Osborn opened the door and found a grizzly bear tampering with the refrigerator on the porch. Osborn shut the door and the bear immediately began to knock the door in. Osborn jumped through the rear window, lacerating his hand and arm.

Date: 9/11/1973
Number of Persons Injured: 1
Number of Bears Involved: 4 Grizzly Bears
Location: 0.5 miles North of road at MP 7
Name of Injured: Alfred Johnson
Age of Injured: No Data
Sex of Injured: Male
Nature of Injury: Punctures, lacerations, head, neck, arms.

Narrative: Johnson was taking pictures for the Alaska Department of Fish and Game. He climbed a spruce tree 100-200 yards from the bears and made sounds like a wounded rabbit. The sow ignored him for a while, but suddenly ran to the base of the tree, climbed part way up and pulled Johnson to the ground by his left foot. She mauled him severely before leaving.

Date: 8/6/1975
Number of Persons Injured: 1
Number of Bears Involved: 2 Grizzly Bear
Location: East face Igloo Mountain
Name of Injured: Michael Bishop
Age of Injured: 26
Sex of Injured: Male
Nature of Injury: Punctures, right thigh.

Narrative: While hiking on Igloo Mountain, Bishop, photographing sheep, crested a rise and saw 2 bears 40 yards away. One of the bears charged. Bishop ran down the rise and fell. The bear leaped and bit him, released and then bit him again in the same spot.

Date: 7/26/1977
Number of Persons Injured: 1
Number of Bears Involved: 4 Grizzly Bears
Location: Drainage SE of Highway pass
Name of Injured: Robert Muller
Age of Injured: 26
Sex of Injured: Male
Nature of Injury: Broken ulna, lacerations, forearm, upper back and head.

Narrative: Muller and companion walked within 50 yards of the bears to photograph. One of the yearling cubs bluff charged. The sow then charged, Muller ran until the sow was close. He then dropped to the ground and curled up. The sow mauled him for 5 seconds.

Date: 6/3/1980
Number of Persons Injured: 1
Number of Bears Involved: 3 Grizzly Bears
Location: Riley Cr. East of RR bridge
Name of Injured: Mark Davenport
Age of Injured: 22
Sex of Injured: Male
Nature of Injury: Laceration to hand.

Narrative: Walking at 24:00 hrs., Davenport, encountered 3 bears on an unmaintained path leading into a wooded creek bank. One bear approached and Davenport shouted. The bear hesitated then charged from 40 feet. Davenport stepped behind a tree and the bear bit his left hand through a ski glove.

Date: 6/4/1980
Number of Persons Injured: 1
Number of Bears Involved: 2 Grizzly Bear
Location: Park road mile 1
Name of Injured: Dan Merren
Age of Injured: 21
Sex of Injured: Male
Nature of Injury: Puncture, left ankle.

Narrative: Three hotel workers walking on the road at 00:55 hrs saw 2 moose cross the road 100 m ahead with 2 bears in pursuit. The larger of the bears saw the hikers and loped towards them. The hikers ran. Merren climbed a tree but the bear pulled him down. The bear moved off and Merren got up the tree again but higher. The bear returned and tried to reach Merren unsuccessfully.

Date: 8/11/1980
Number of Persons Injured: 1
Number of Bears Involved: 2 Grizzly Bear
Location: Grant Cr., Mt. Eielson
Name of Injured: Hiroshi Tokura
Age of Injured: 25
Sex of Injured: Male
Nature of Injury: See narrative.

Narrative: Four backpackers approached thick brush along creek. The victim stated that he was ahead of others, heard, then saw the bears 6 meters away coming towards him. He yelled, backed away, and sat down covering his head. Another member of the party stated that he ran from the bear. The bear attacked causing almost complete avulsion of the scalp, severe facial and shoulder lacerations, puncture wounds to the back and buttock and severe facial fracture.

Date: 8/31/1982
Number of Persons Injured: 1
Number of Bears Involved: 1 Grizzly Bear
Location: 1 mile east of Teklanika Campground
Name of Injured: John Alsworth

Age of Injured: 28
Sex of Injured: Male
Nature of Injury: Puncture wounds, buttocks.

Narrative: Two day hikers met a bear at 10 meters in brush. They left food that the bear ate. The bear approached again and ate some cookies thrown in the opposite direction. The bear approached again, the hikers lay down and the bear circled, sniffed and bit Ashworth's buttocks once. The bear left. The bear appeared more curious than aggressive.

Date: 6/12/1985
Number of Persons Injured: 1
Number of Bears Involved: 1 Grizzly Bear
Location: Railroad tracks 200 meters South of depot
Name of Injured: Saskia Roggezeen
Age of Injured: 25
Sex of Injured: Female
Nature of Injury: Punctures, buttocks and right foot.

Narrative: At 2045 hrs, Roggezeen and companion were walking south along the RR tracks from the train depot. They observed a bear about 50 meters away, near Morino Campground. They ran down the track embankment into the brush. The bear pursued them. Roggezeen fell and was bitten briefly by the bear.

Date: 6/13/1985
Number of Persons Injured: 1
Number of Bears Involved: 4 Grizzly Bears
Location: Savage Campground near site 3
Name of Injured: LeAnn Landstrom
Age of Injured: 30
Sex of Injured: Female
Nature of Injury: Punctures, back, right thigh, buttocks.

Narrative: Landstrom was walking through the forest towards the park road at 2145 hrs when she saw a sow with 3 yearlings 100-150 feet ahead. The sow charged and Landstrom ran. The bear caught her, bit her, and then backed off. Landstrom got up and was attacked a second time. The bear moved off again and Landstrom climbed into a tree. The sow was probably acting defensively to protect her cubs.

Date: 5/31/1987
Number of Persons Injured: 1
Number of Bears Involved: 2 Grizzly Bears
Location: 5 miles South of Park road, West branch of Toklat River.

Name of Injured: Randy Smith
Age of Injured: 29
Sex of Injured: Male
Nature of Injury: Broken left foot.

Narrative: Smith was passing the base of a 20 foot high cut bank when he looked up and saw 2 bears at the top of the bank 100 meters away coming towards him. Smith started yelling, one bear veered off, but the other continued to charge. It knocked him down and stepped on his foot as he turned away from it. The blow also ripped Smith's pack. Smith curled up on the ground and the bear moved off immediately. Smith felt he had surprised the bears. He thought they had been in the same area a few days earlier.

Date: 7/5/1985
Number of Persons Injured: 1
Number of Bears Involved: 1 Grizzly Bear
Location: 0.5 miles North of Park road at mile 59.
Name of Injured: Lee Grimstad
Age of Injured: 29
Sex of Injured: Male
Nature of Injury: Laceration, punctures right calf.

Narrative: While day hiking, Grimstad saw a bear in the distance and approached to within a quarter mile for photographs. The bear slowly moved towards Grimstad as it fed. Its movements were not direct or purposeful. Grimstad continued to photograph the bear during its approach and made no attempt to scare it off as it moved to within a few feet of him. At this point Grimstad lay down and the bear cautiously sniffed him and bit his leg. Grimstad moved abruptly and the bear backed off and moved away. Grimstad described the bear as curious rather than aggressive.

Date: 6/6/1988
Number of Persons Injured: 1
Number of Bears Involved: 1 Grizzly Bear
Location: 3.5 miles South of Savage River Campground.
Name of Injured: Graig James
Age of Injured: No Data
Sex of Injured: Male
Nature of Injury: Laceration, scalp.

Narrative: Craig was sleeping on the ground without a tent, on a defined bear trail, near a winter-killed moose. The backcountry unit was closed at the time. Craig felt a blow to his head at 01:30 that elicited a loud yell. Craig circled up into a ball and heard the animal move off. He never saw the bear.

Date: 7/9/1997

Number of Persons Injured: 1
Number of Bears Involved: 3 Grizzly Bears
Location: Backcountry Unit #11, low saddle between Stony Dome and Gravel Mt..
Name of Injured: Lucynthia Robins
Age of Injured: 20
Sex of Injured: Female
Nature of Injury: Single injury to hand; puncture on top of hand.

Narrative: Lucynthia was hiking out from behind Stony Dome, alone, making noise by singing. She was 20-30 yards below a ridge and saw a bear with 2 cubs on top of the ridge. The female bear charged towards her, stopped, then continued charging. She stood her ground until the bear was close then she dropped to the ground and played dead. The bear ran on top of her and grabbed her hand in its mouth. She resisted at first then relaxed and the bear let go. The bear pawed her briefly then ran away with its cubs.